

FIG. 42A

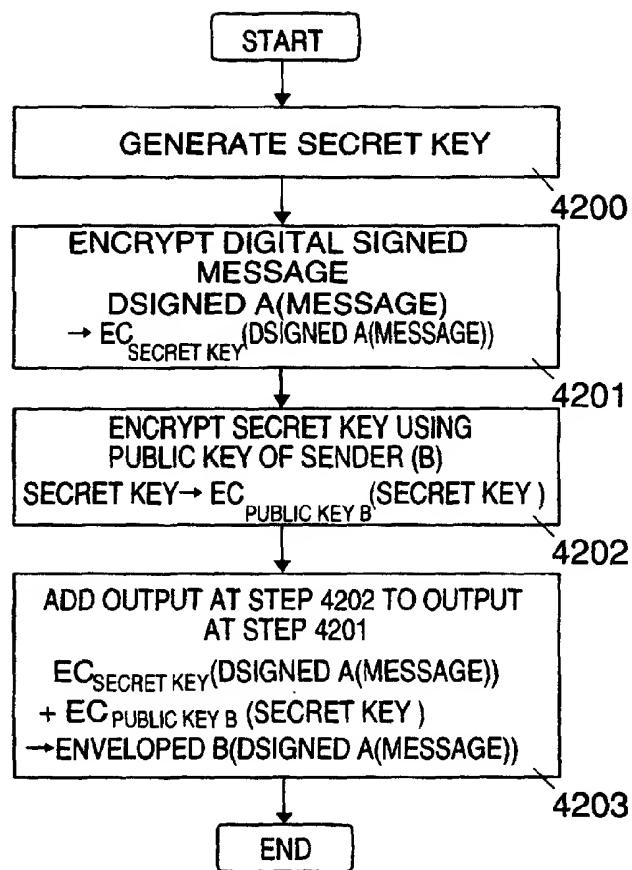


FIG. 42B

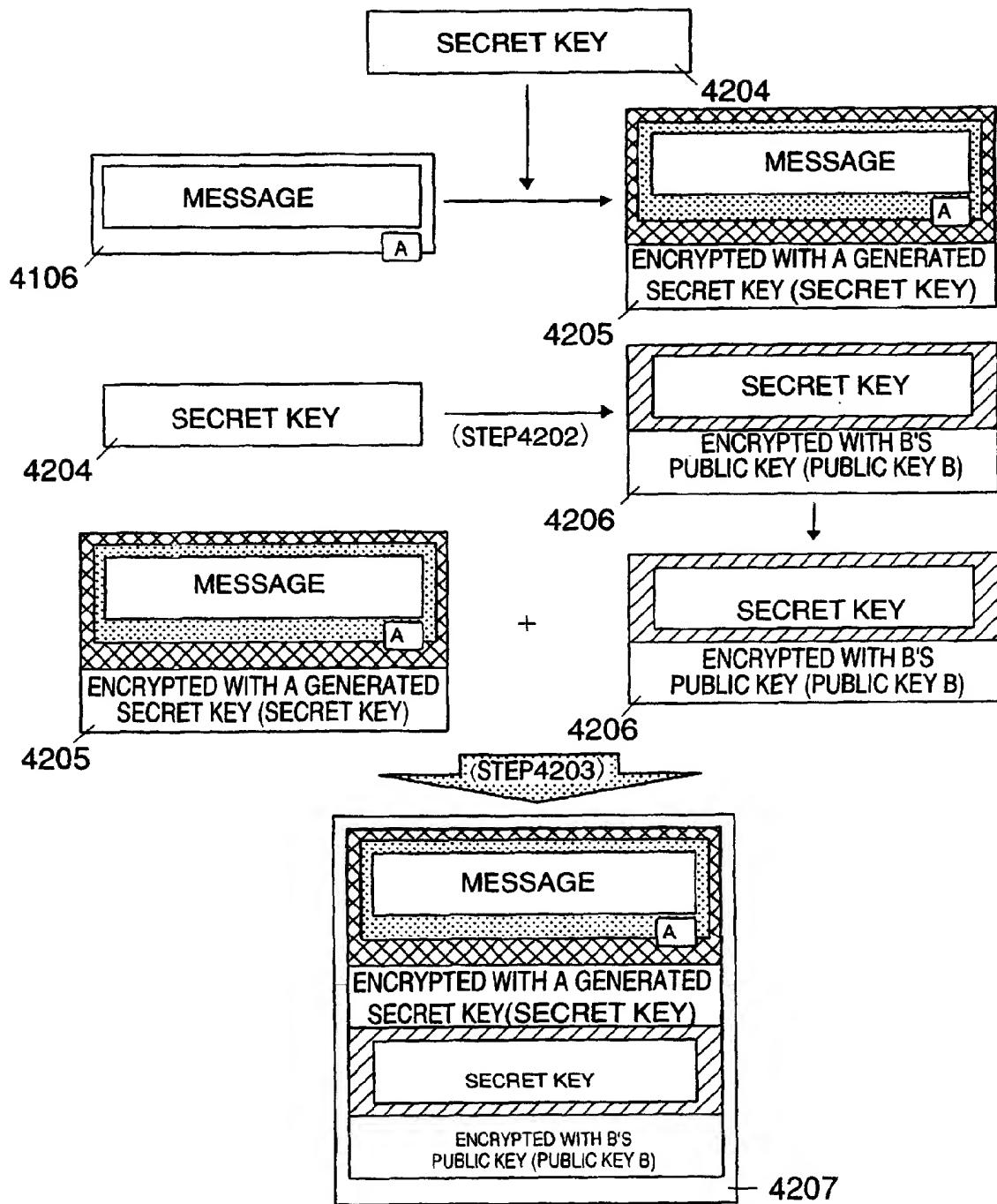
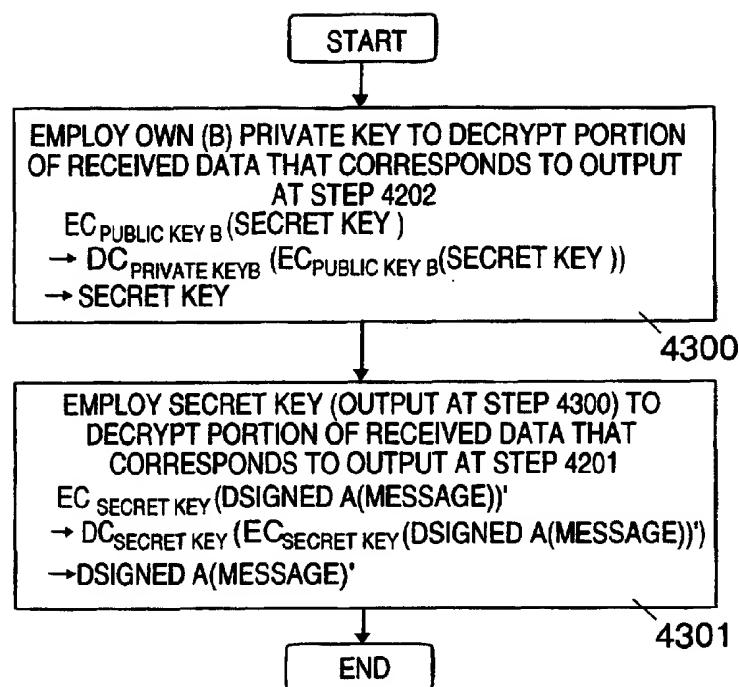


FIG. 43A



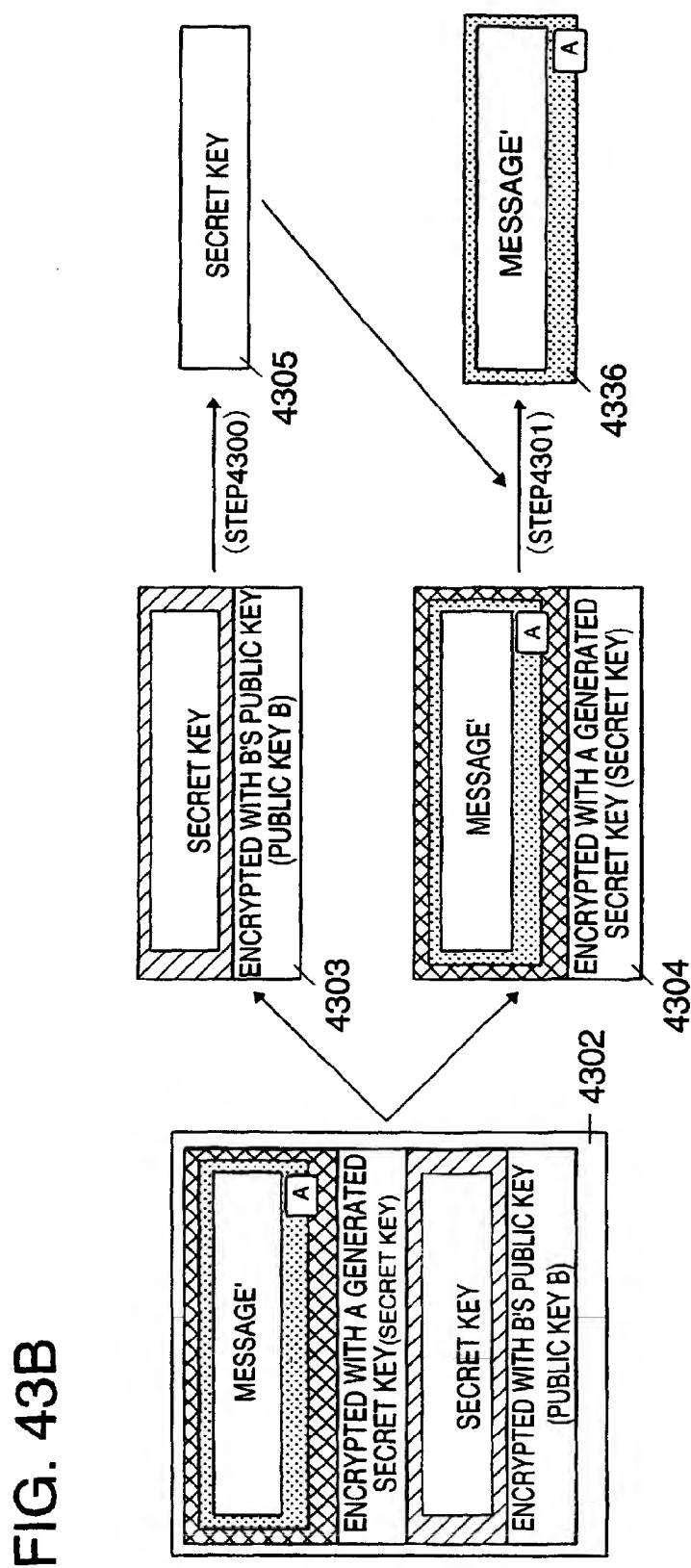


FIG. 44A

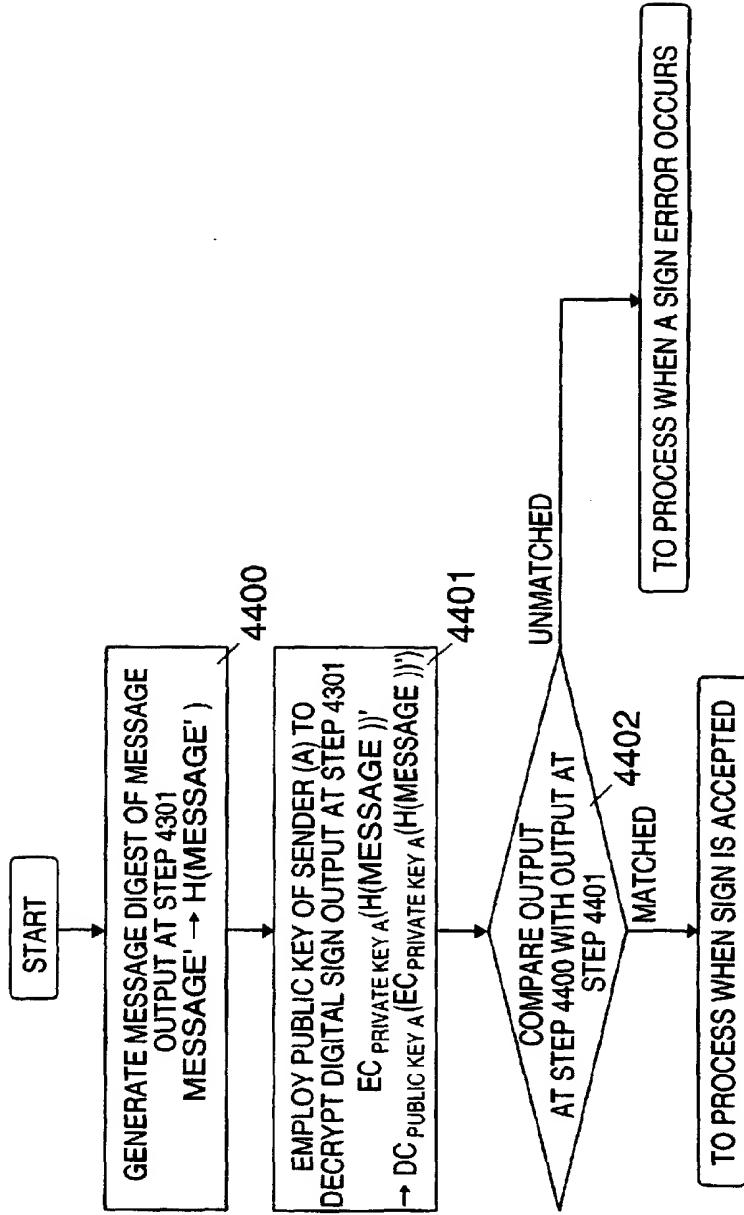


FIG. 44B

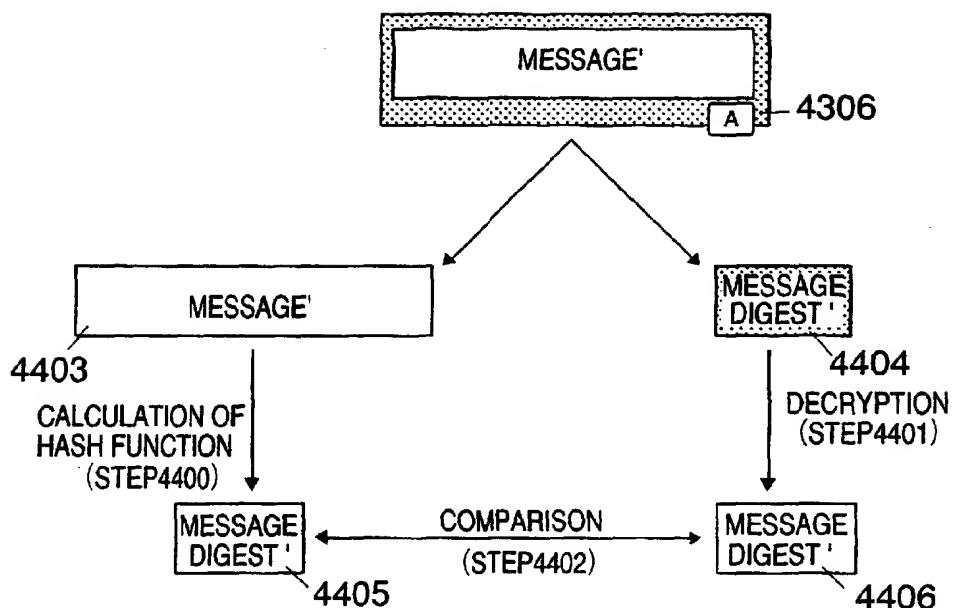


FIG. 45

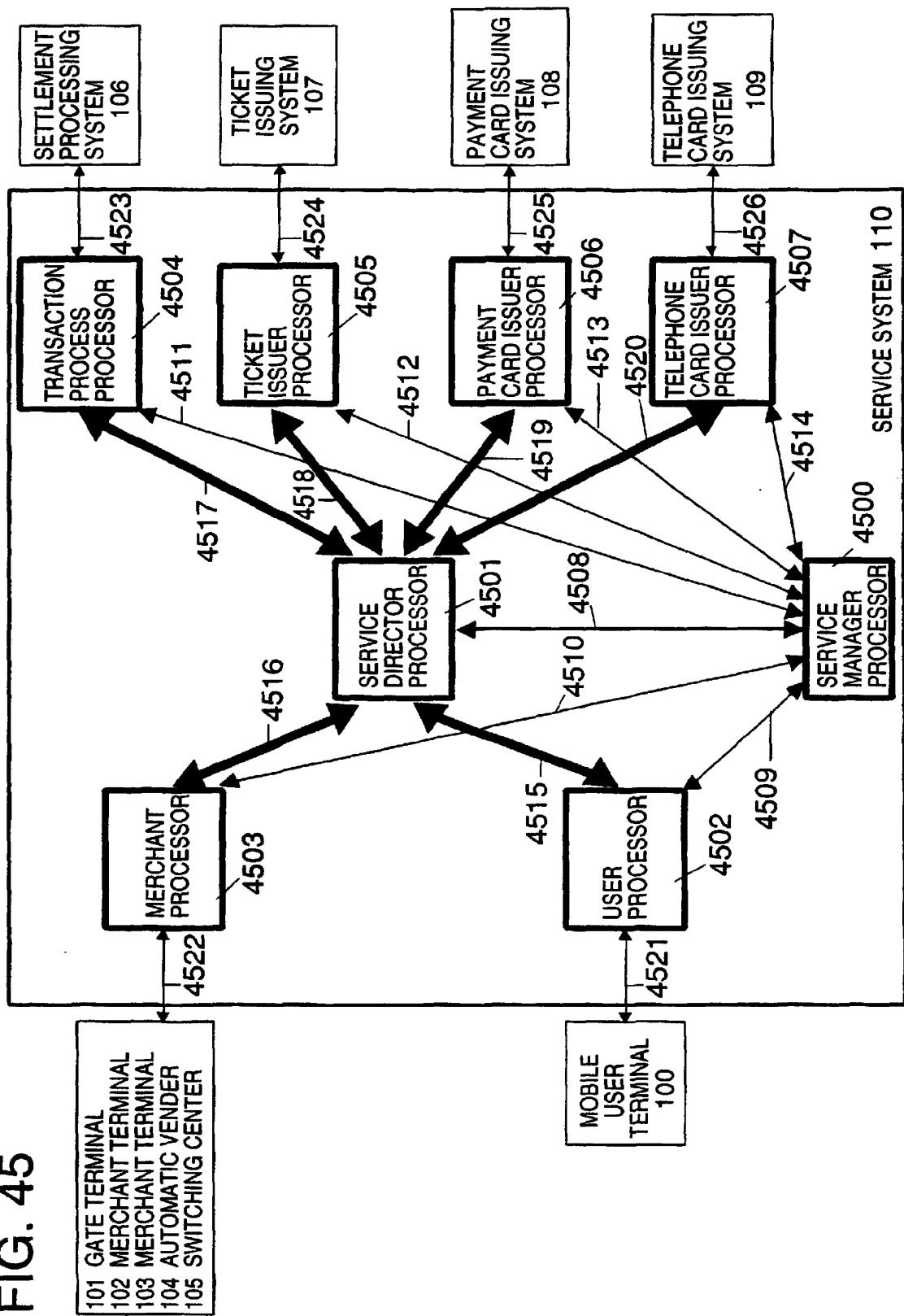


FIG. 46

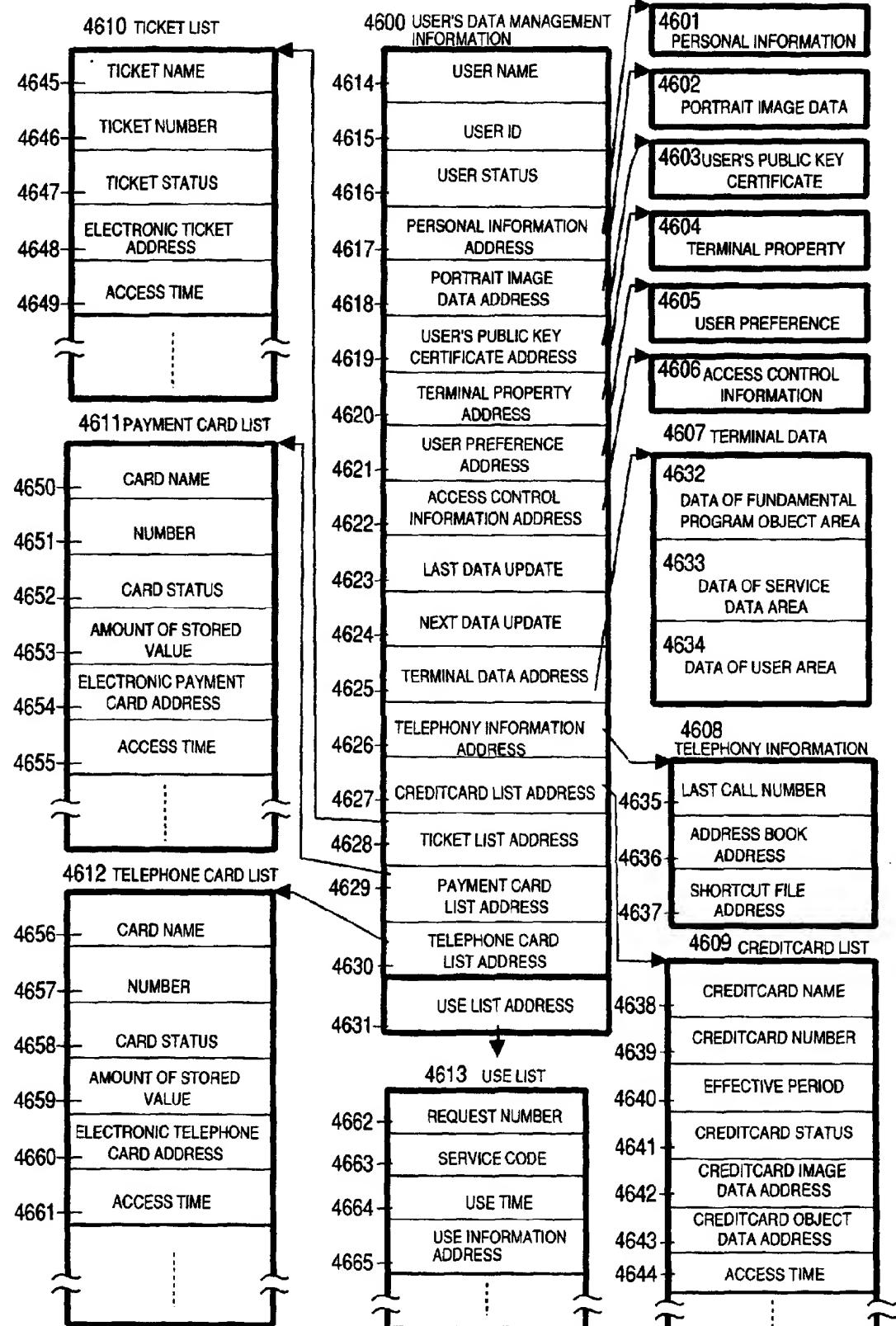


FIG. 47

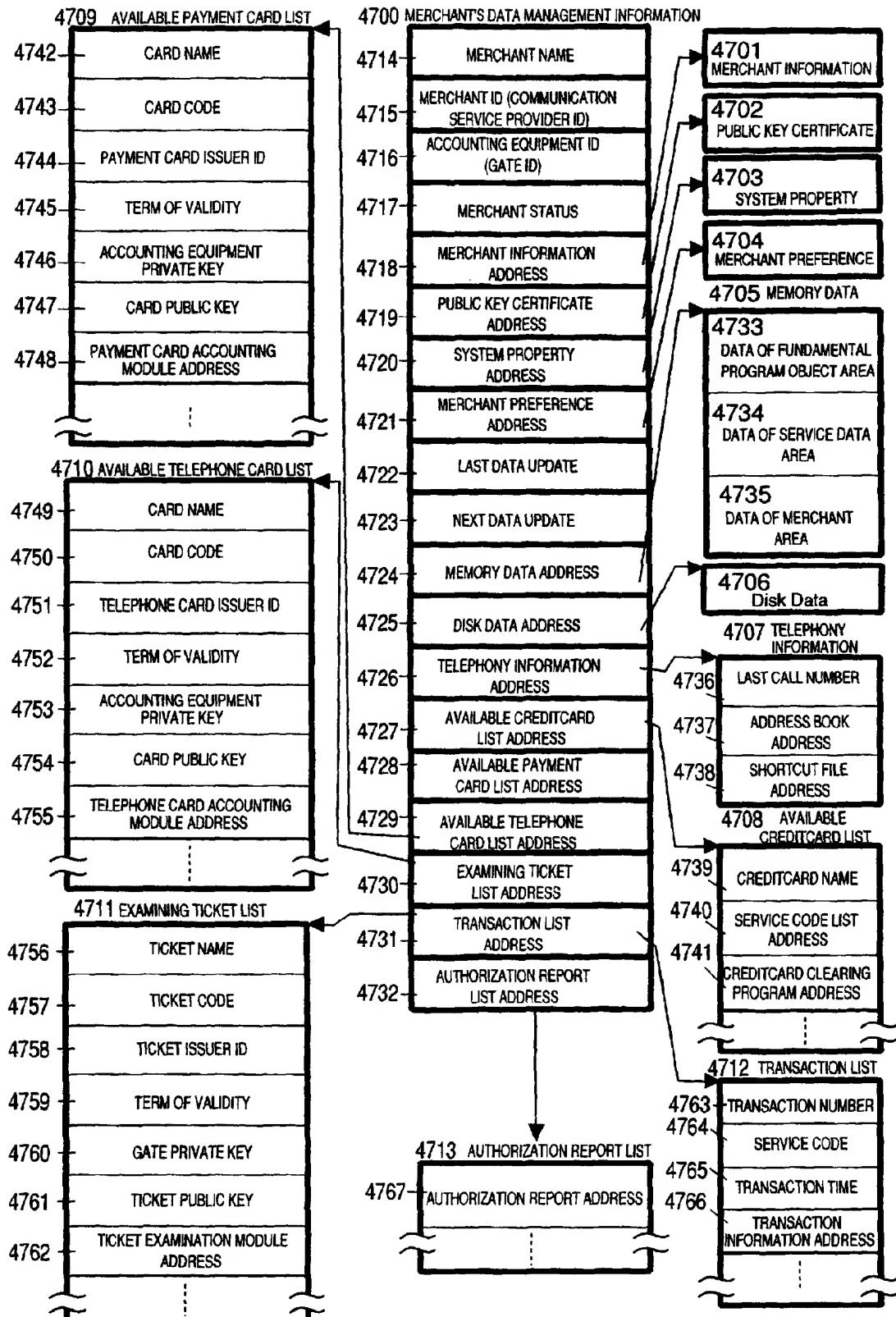


FIG. 48

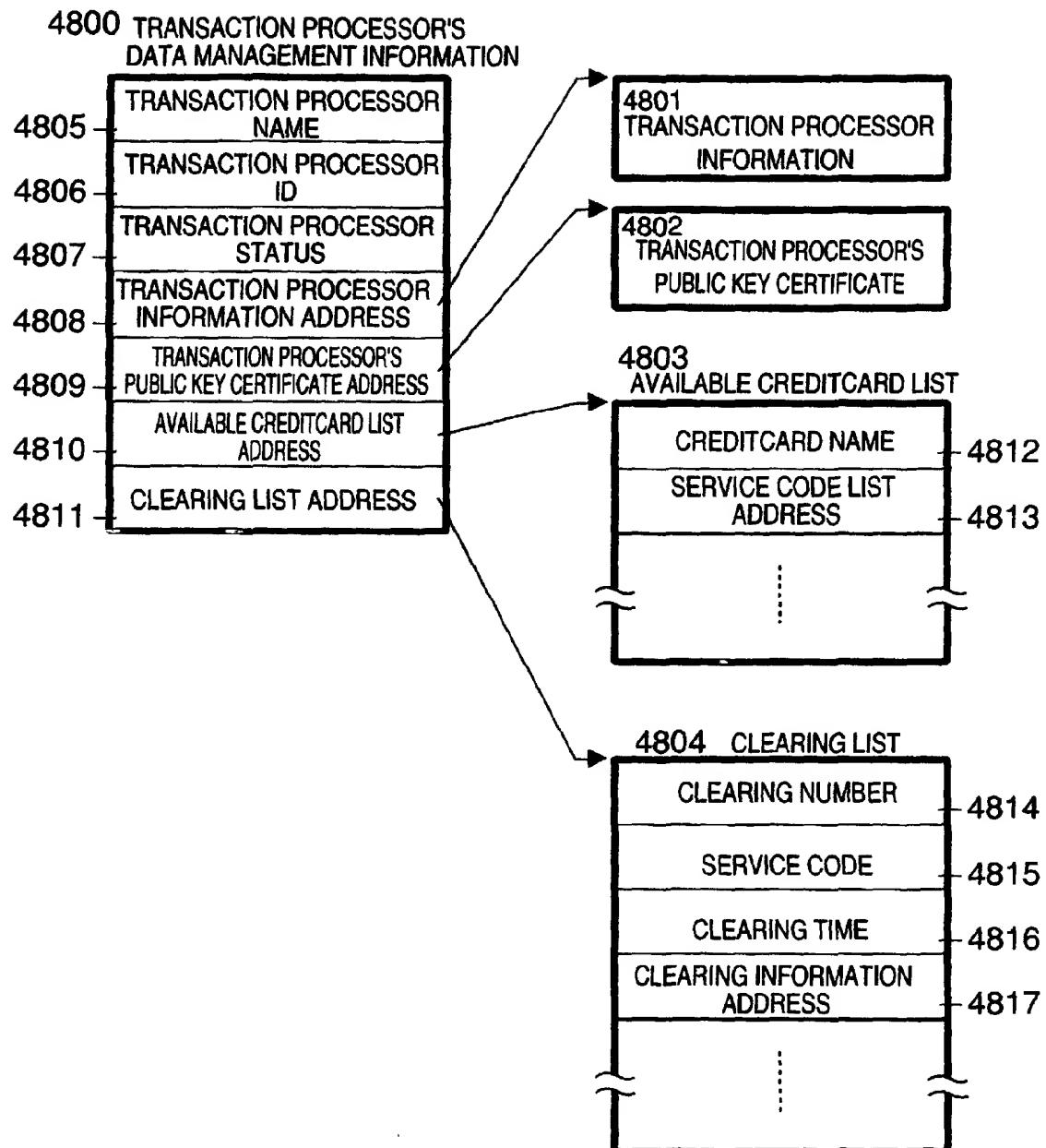


FIG. 49

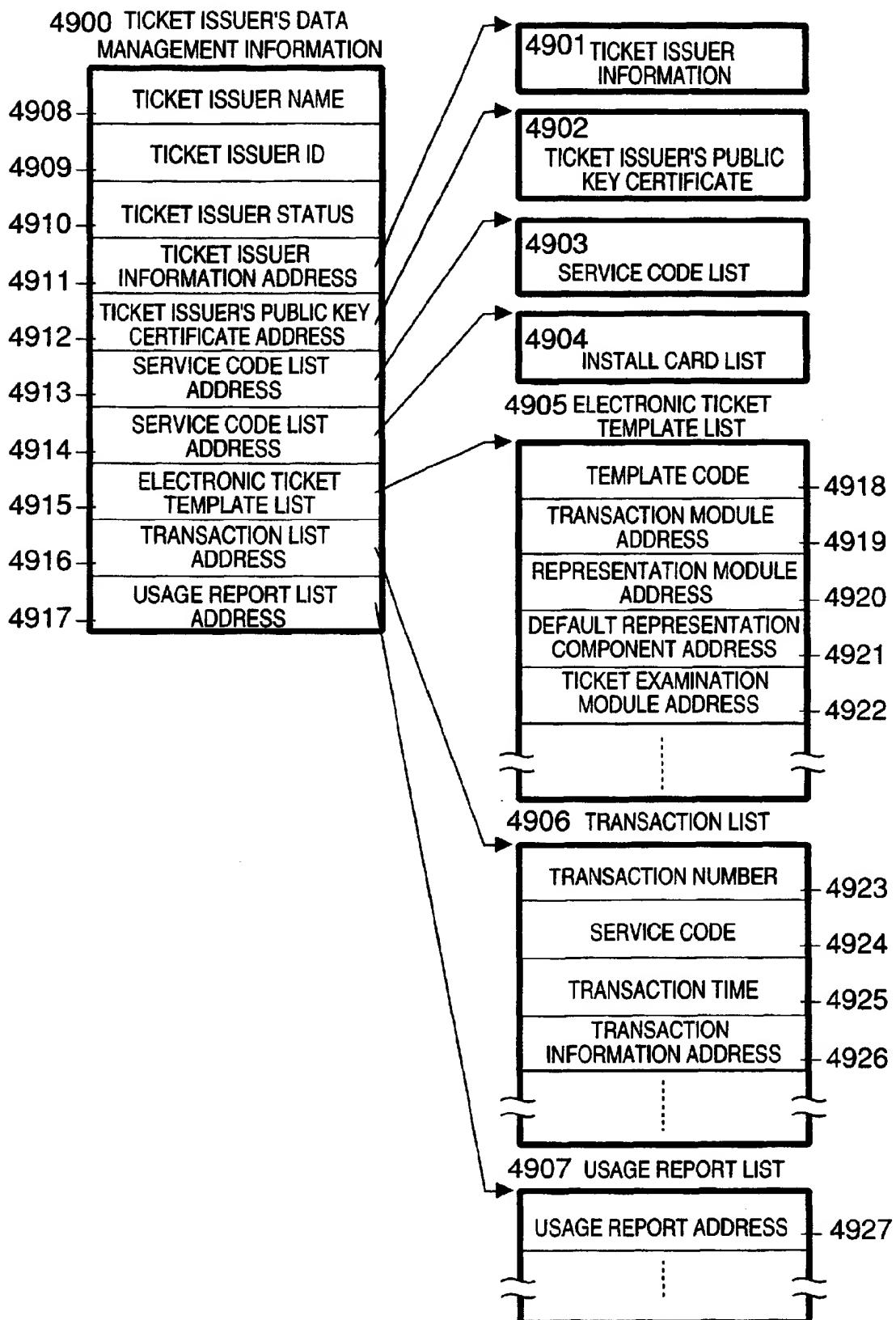


FIG. 50

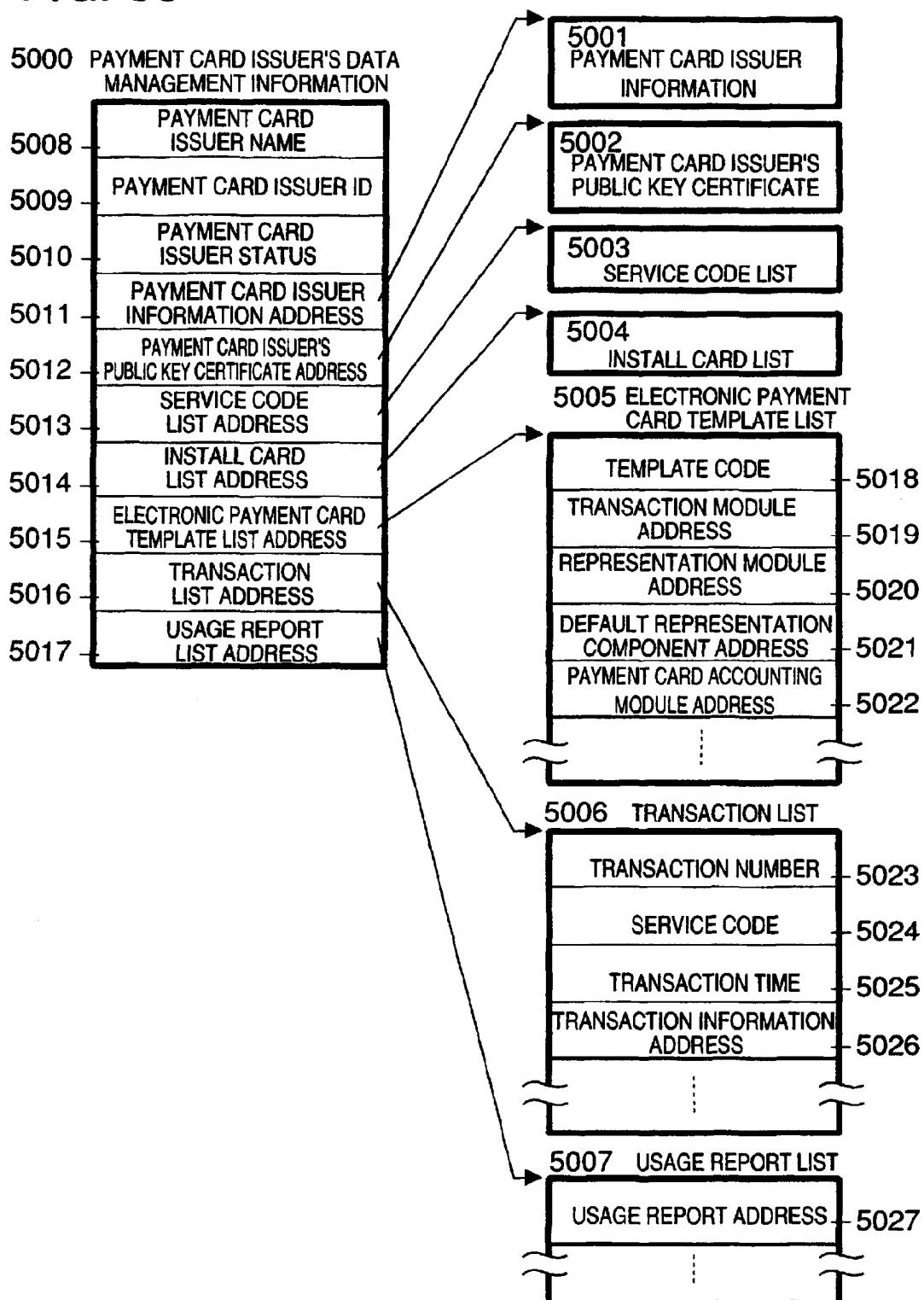


FIG. 51

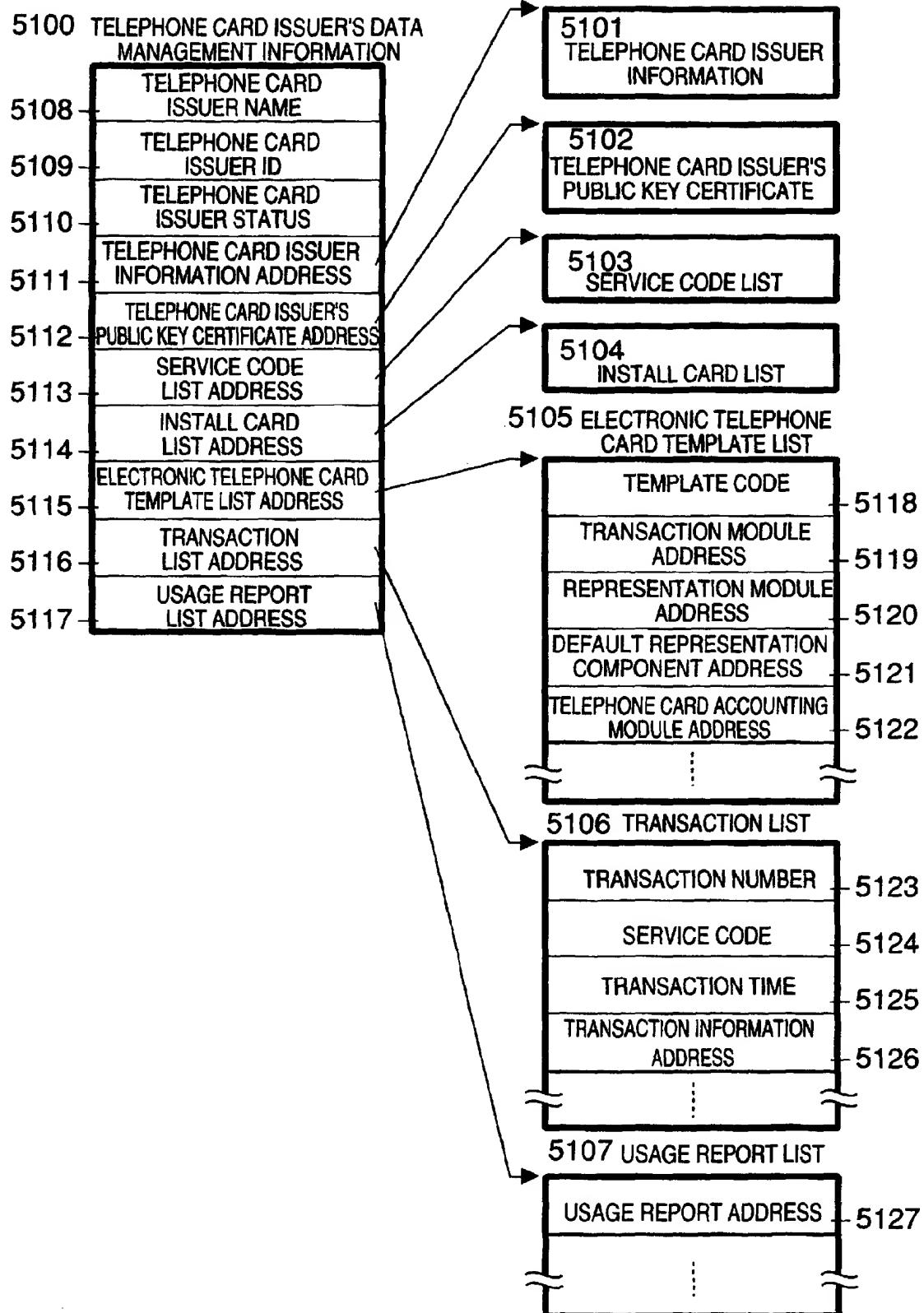


FIG. 52A

5200	USER LIST
5207	USER NAME
5208	USER ID
5209	USER'S TELEPHONE NUMBER
5210	USER PUBLIC KEY CERTIFICATE ADDRESS
5211	AVAILABLE SERVICE LIST ADDRESS
5212	USER INFORMATION ADDRESS

FIG. 52B

5201	MERCHANT LIST
5213	MERCHANT NAME
5214	MERCHANT ID (COMMUNICATION SERVICE PROVIDER ID)
5215	ACCOUNTING EQUIPMENT ID (GATE ID)
5216	MERCHANT'S TELEPHONE NUMBER
5217	AVAILABLE SERVICE LIST ADDRESS
5218	CUSTOMERS TABLE ADDRESS
5219	MERCHANT INFORMATION ADDRESS

FIG. 52C

5202	TRANSACTION PROCESSORS LIST
5220	TRANSACTION PROCESSOR NAME
5221	TRANSACTION PROCESSOR ID
5222	TRANSACTION PROCESSOR'S COMMUNICATION ID
5223	AVAILABLE SERVICE LIST ADDRESS
5224	TRANSACTION PROCESSOR INFORMATION ADDRESS

FIG. 52D

5203 TICKET ISSUERS LIST	
5225	TICKET ISSUER NAME
5226	TICKET ISSUER ID
5227	TICKET ISSUER'S COMMUNICATION ID
5228	AVAILABLE SERVICE LIST ADDRESS
5229	INSTALL CARD LIST ADDRESS
5230	CUSTOMERS TABLE ADDRESS
5231	TICKET ISSUER INFORMATION ADDRESS

FIG. 52E

5204 PAYMENT CARD ISSUERS LIST	
5232	PAYMENT CARD ISSUER NAME
5233	PAYMENT CARD ISSUER ID
5234	PAYMENT CARD ISSUER'S COMMUNICATION ID
5235	AVAILABLE SERVICE LIST ADDRESS
5236	INSTALL CARD LIST ADDRESS
5237	CUSTOMERS TABLE ADDRESS
5238	PAYMENT CARD ISSUER INFORMATION ADDRESS

FIG. 52F

5239	TELEPHONE CARD ISSUER NAME
5240	TELEPHONE CARD ISSUER ID
5241	TELEPHONE CARD ISSUER'S COMMUNICATION ID
5242	AVAILABLE SERVICE LIST ADDRESS
5243	INSTALL CARD LIST ADDRESS
5244	CUSTOMERS TABLE ADDRESS
5245	TELEPHONE CARD ISSUER INFORMATION ADDRESS

FIG. 52G

5246	SERVICE PROVIDING NUMBER
5247	SERVICE CODE
5248	SERVICE PROVIDING TIME
5249	PROVIDED SERVICE INFORMATION ADDRESS

FIG. 53

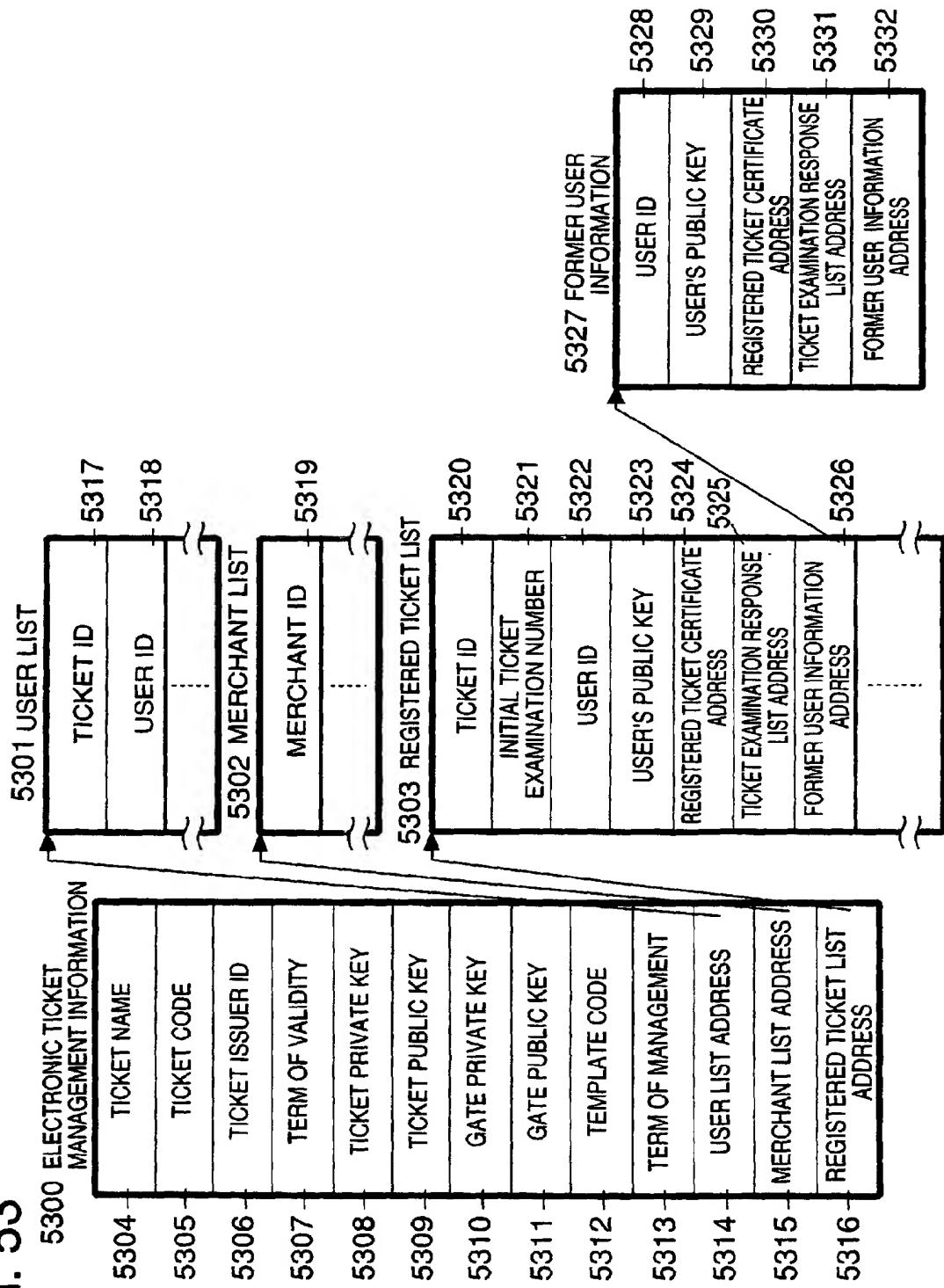


FIG. 54

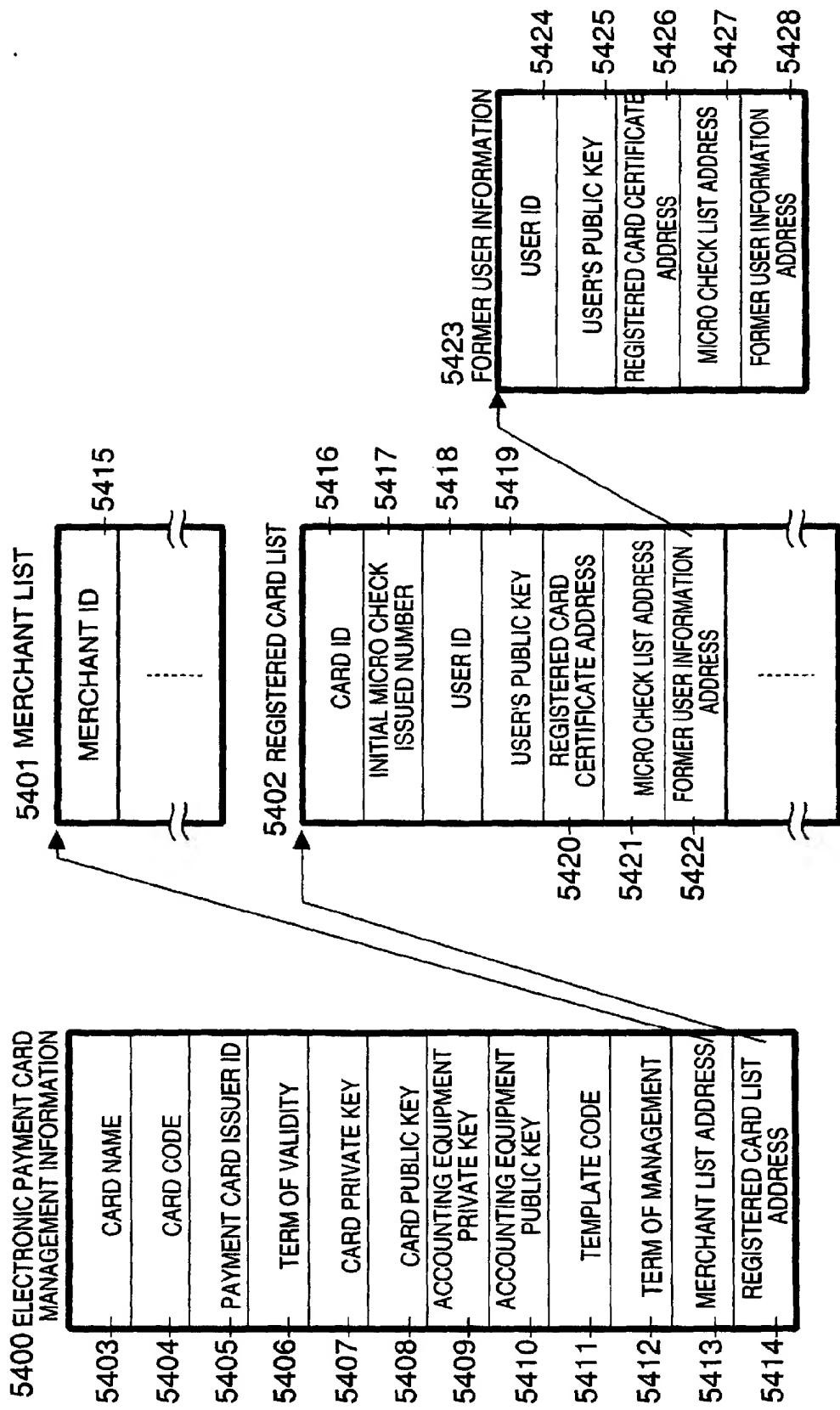


FIG. 55

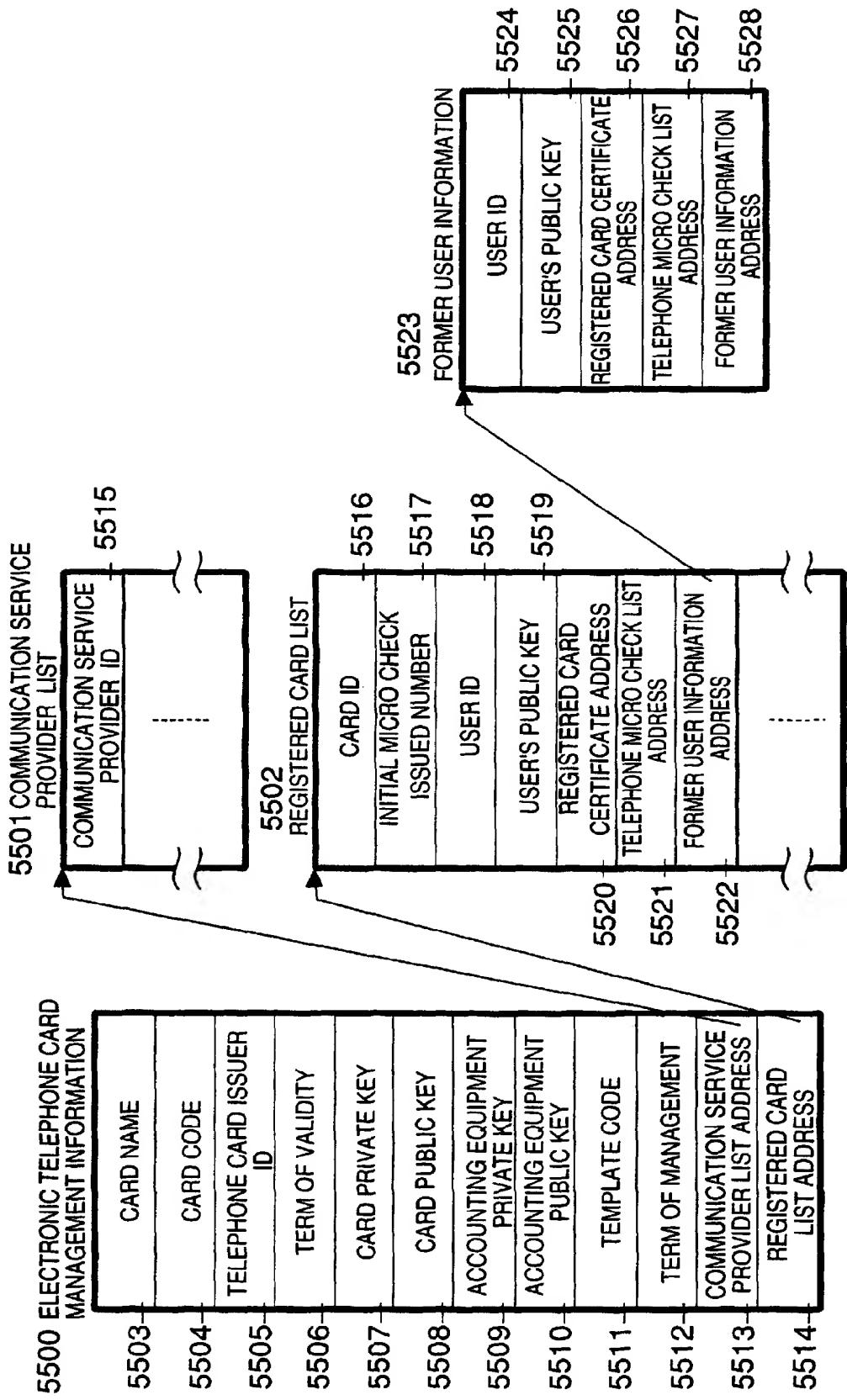


FIG. 56A

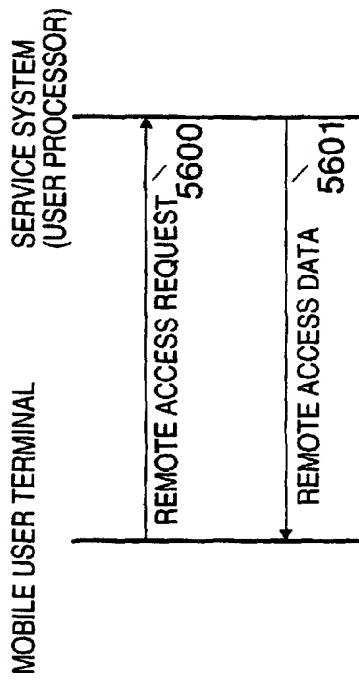


FIG. 56B

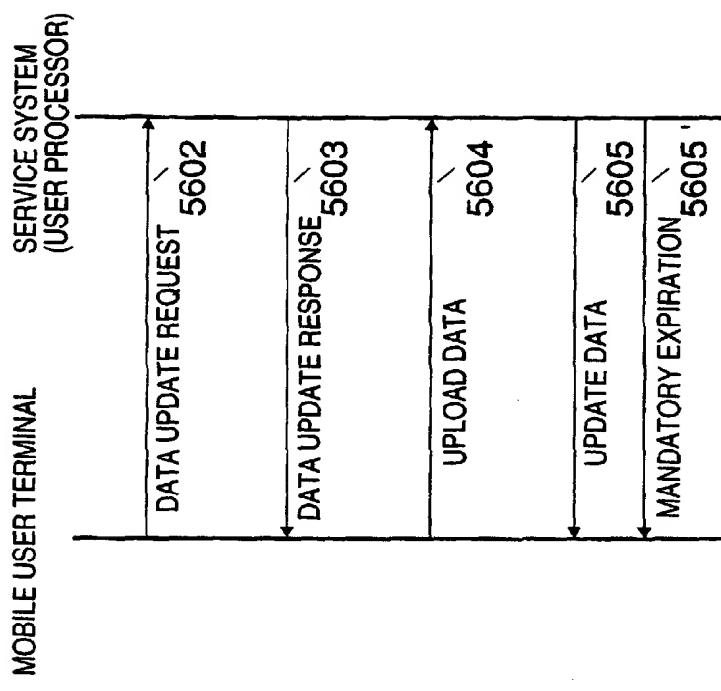


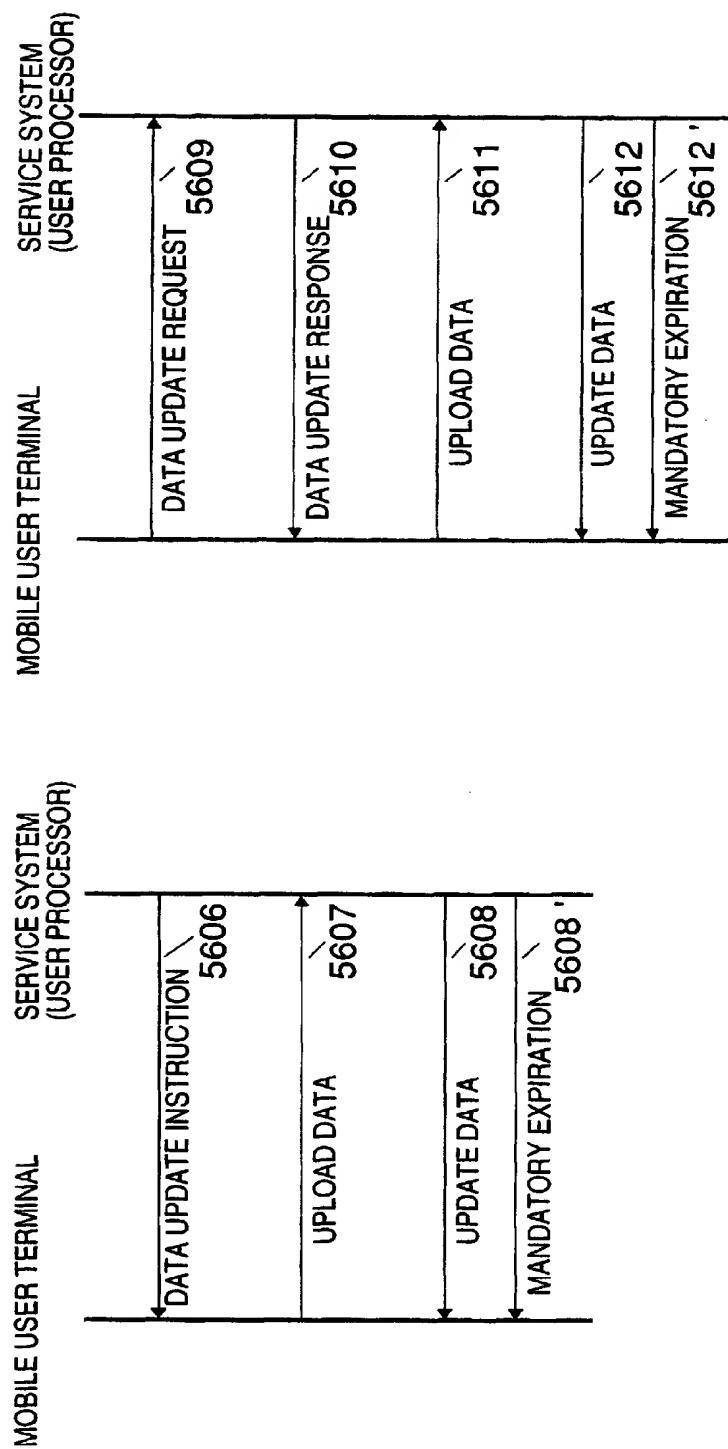
FIG. 56C  
FIG. 56D

FIG. 57A

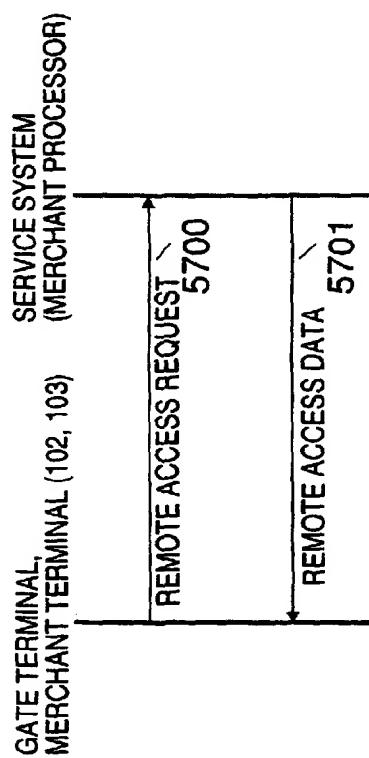


FIG. 57B

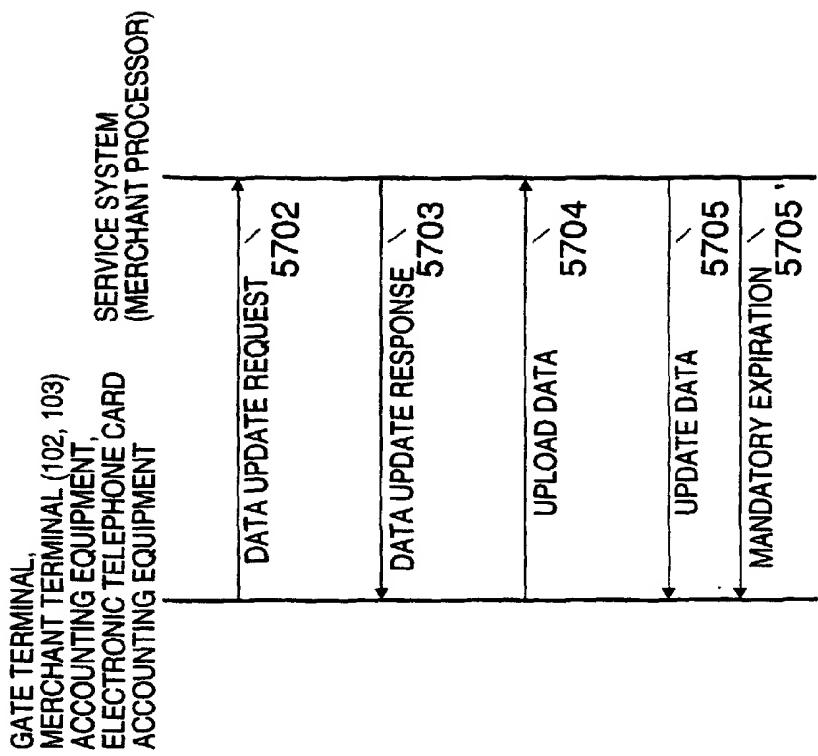


FIG. 57C

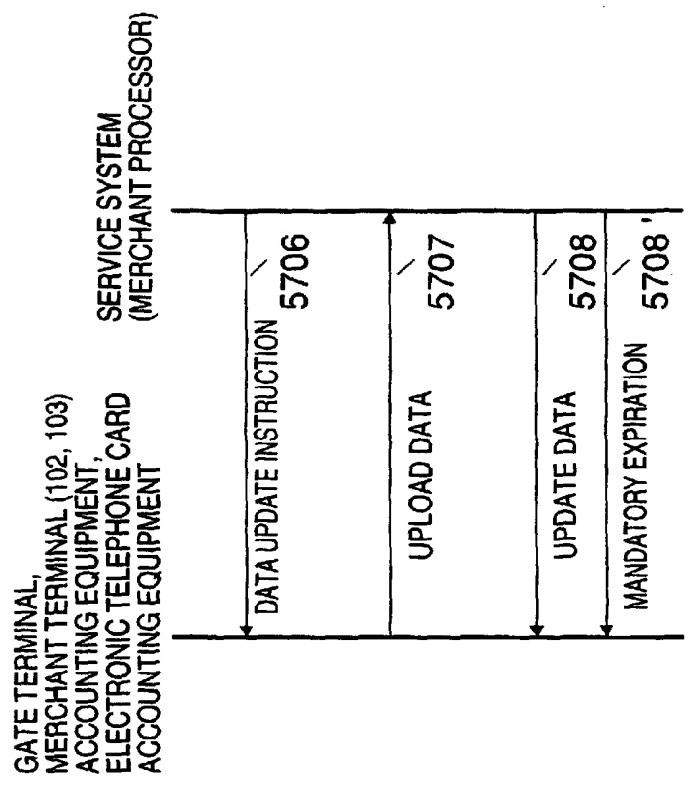


FIG. 57D

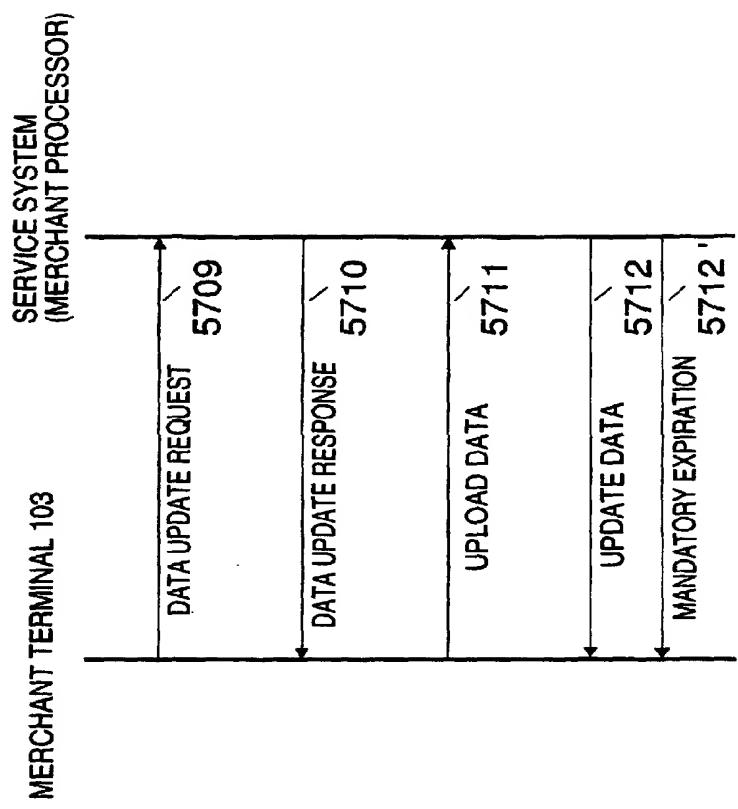


FIG. 58

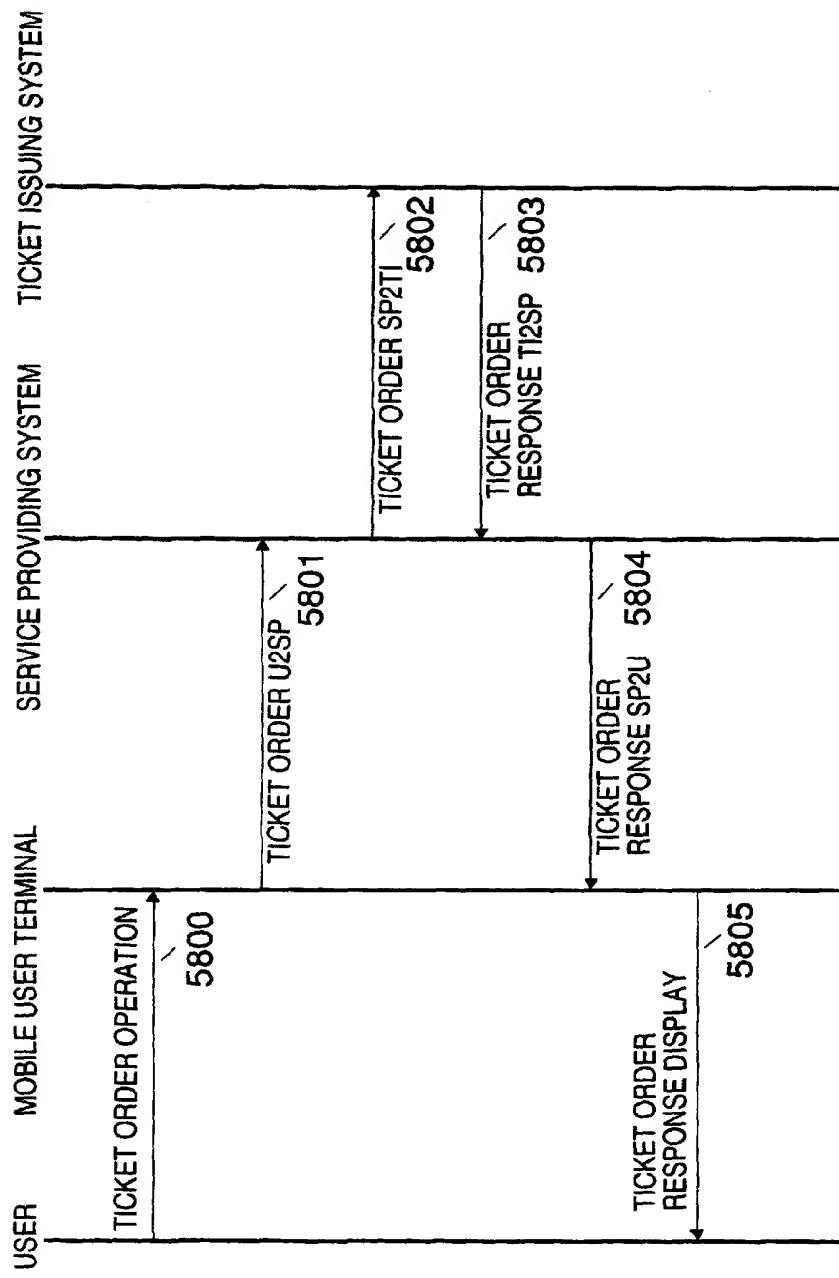


FIG. 59

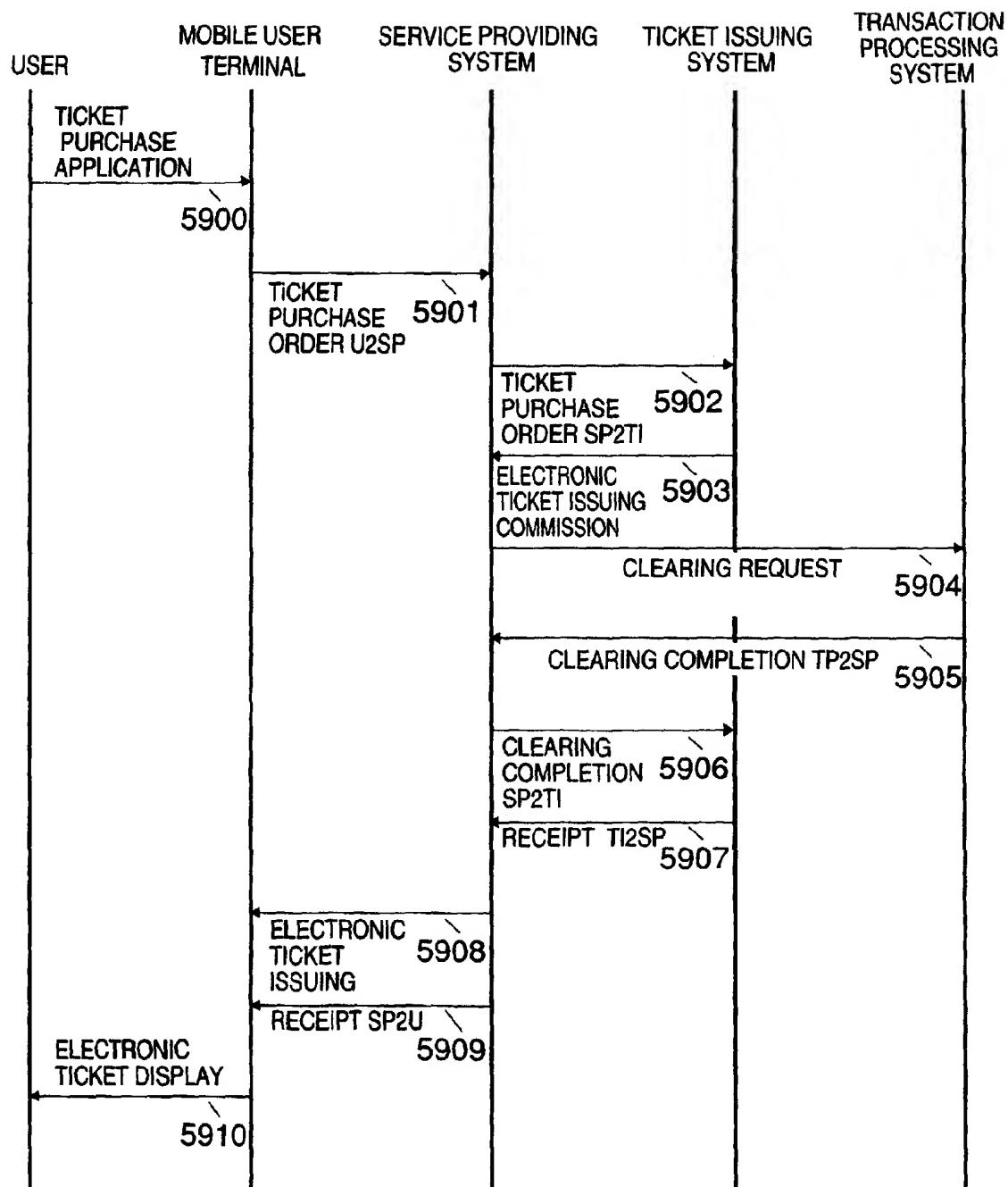


FIG. 60

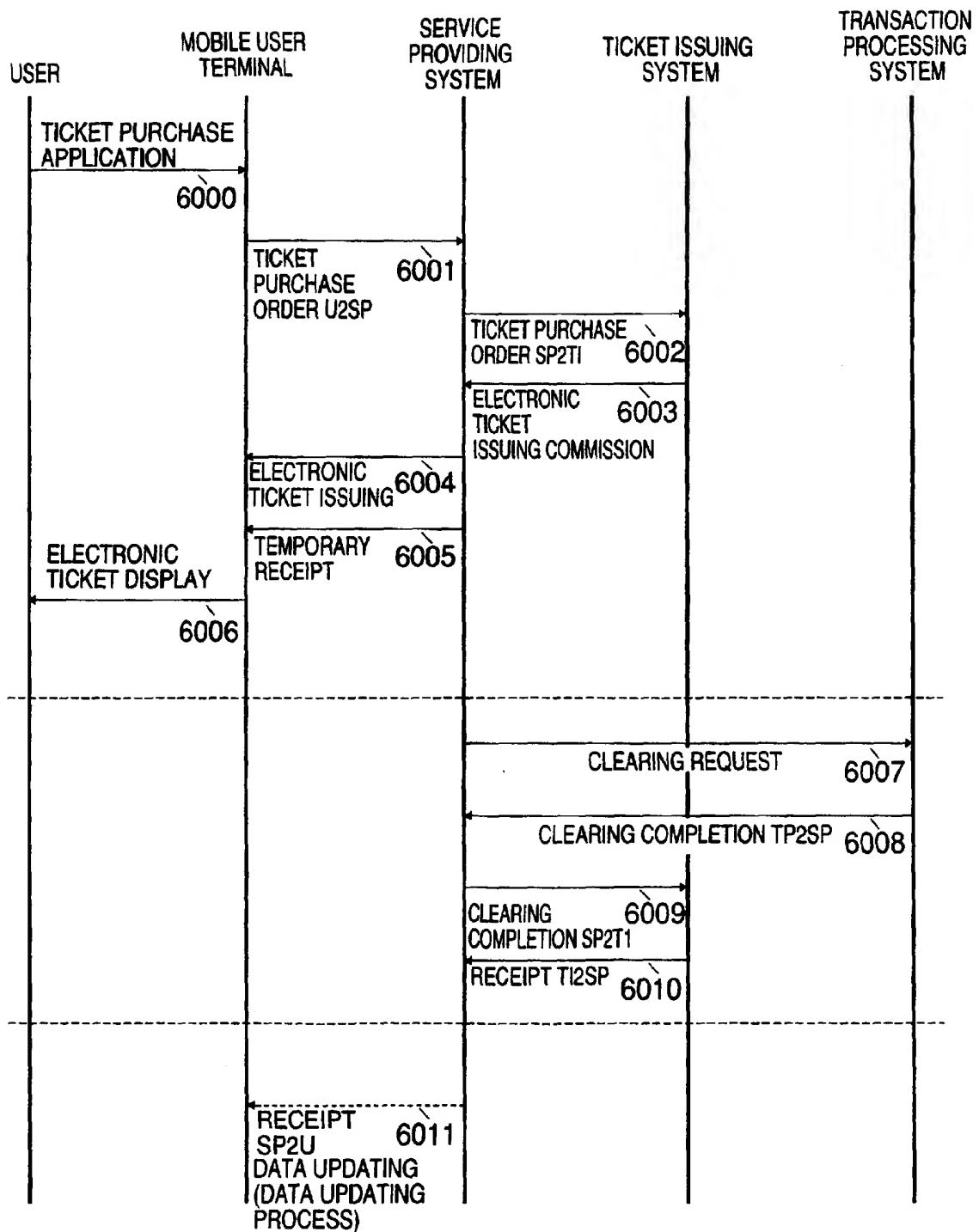


FIG. 61

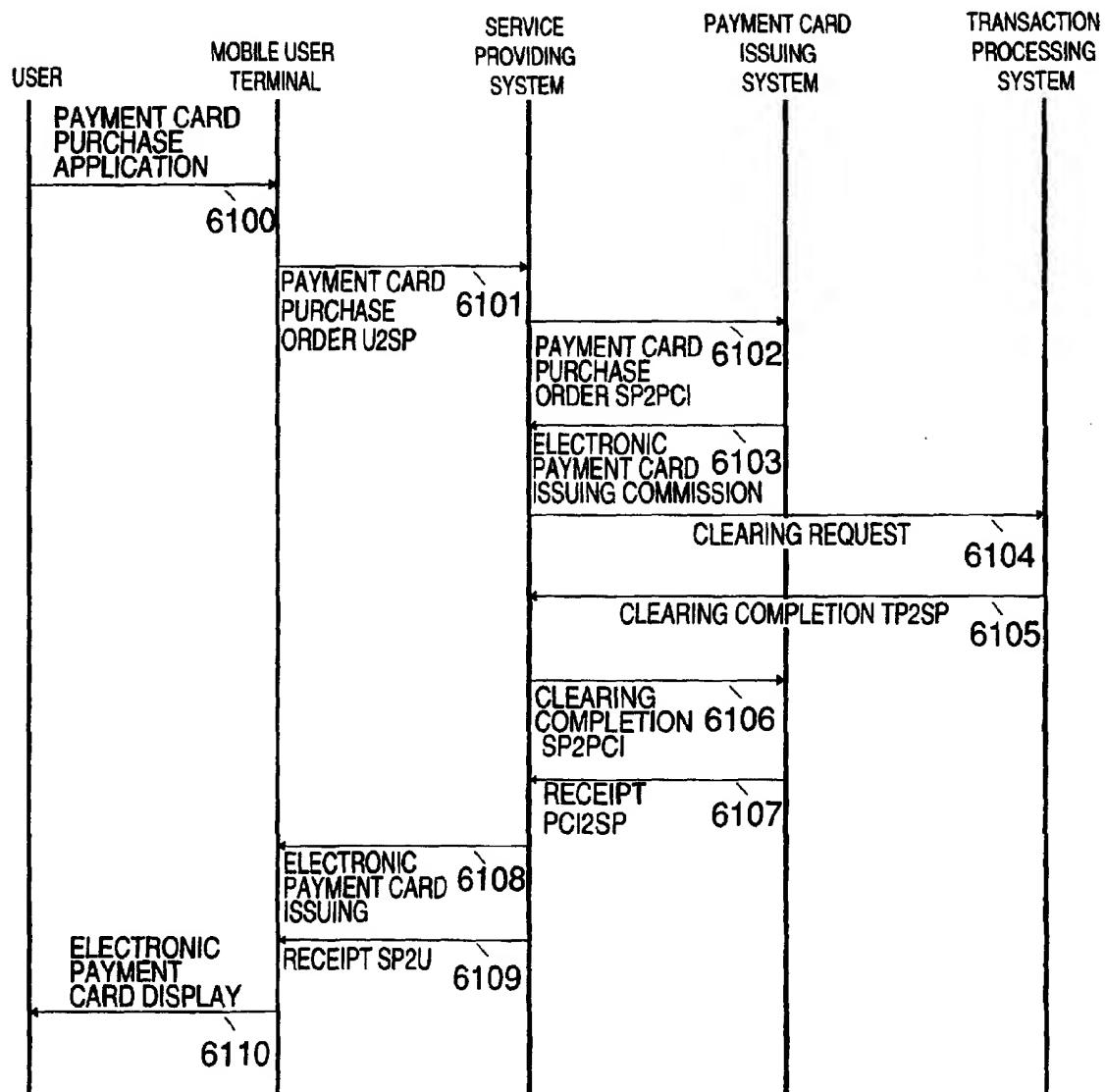


FIG. 62

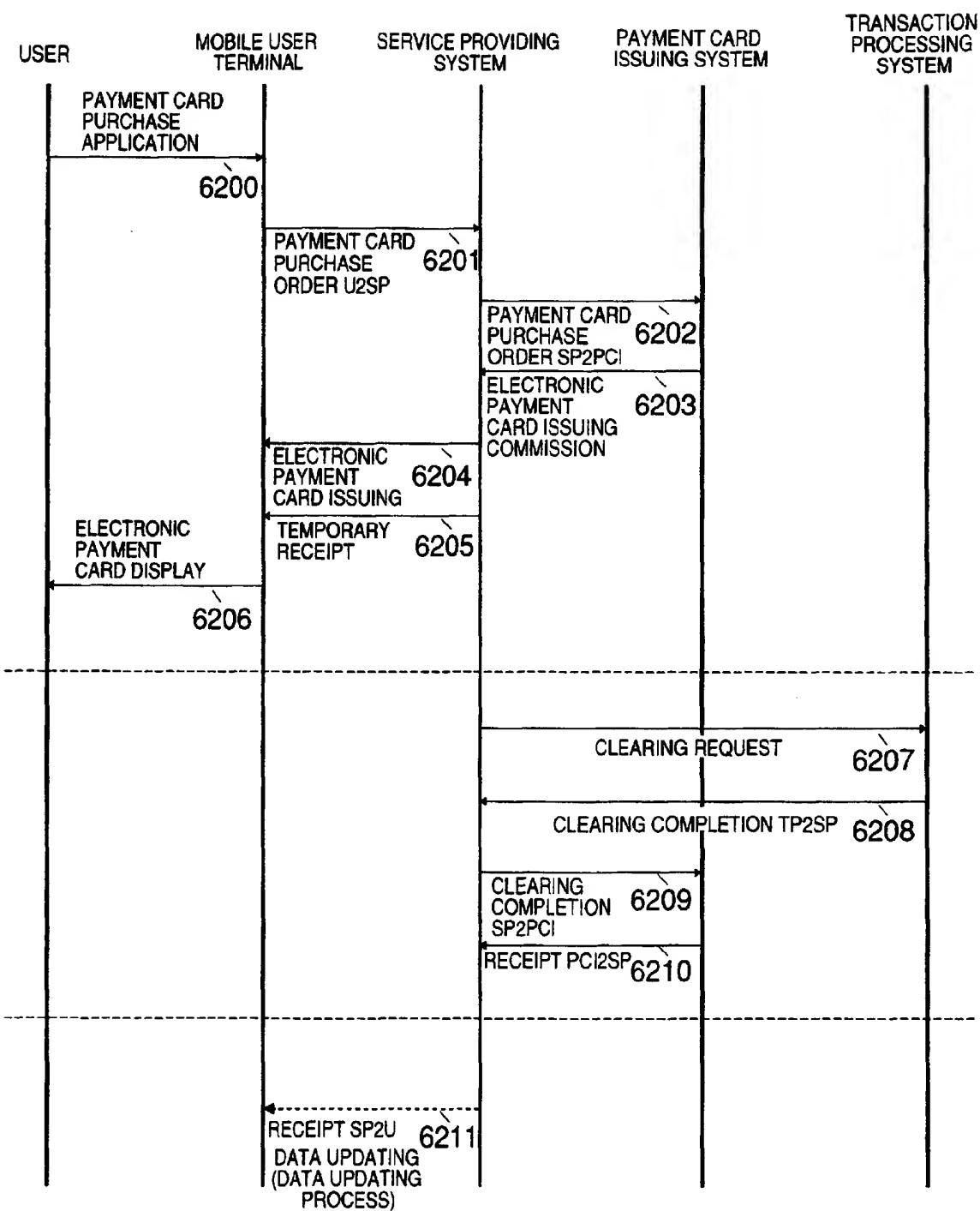


FIG. 63

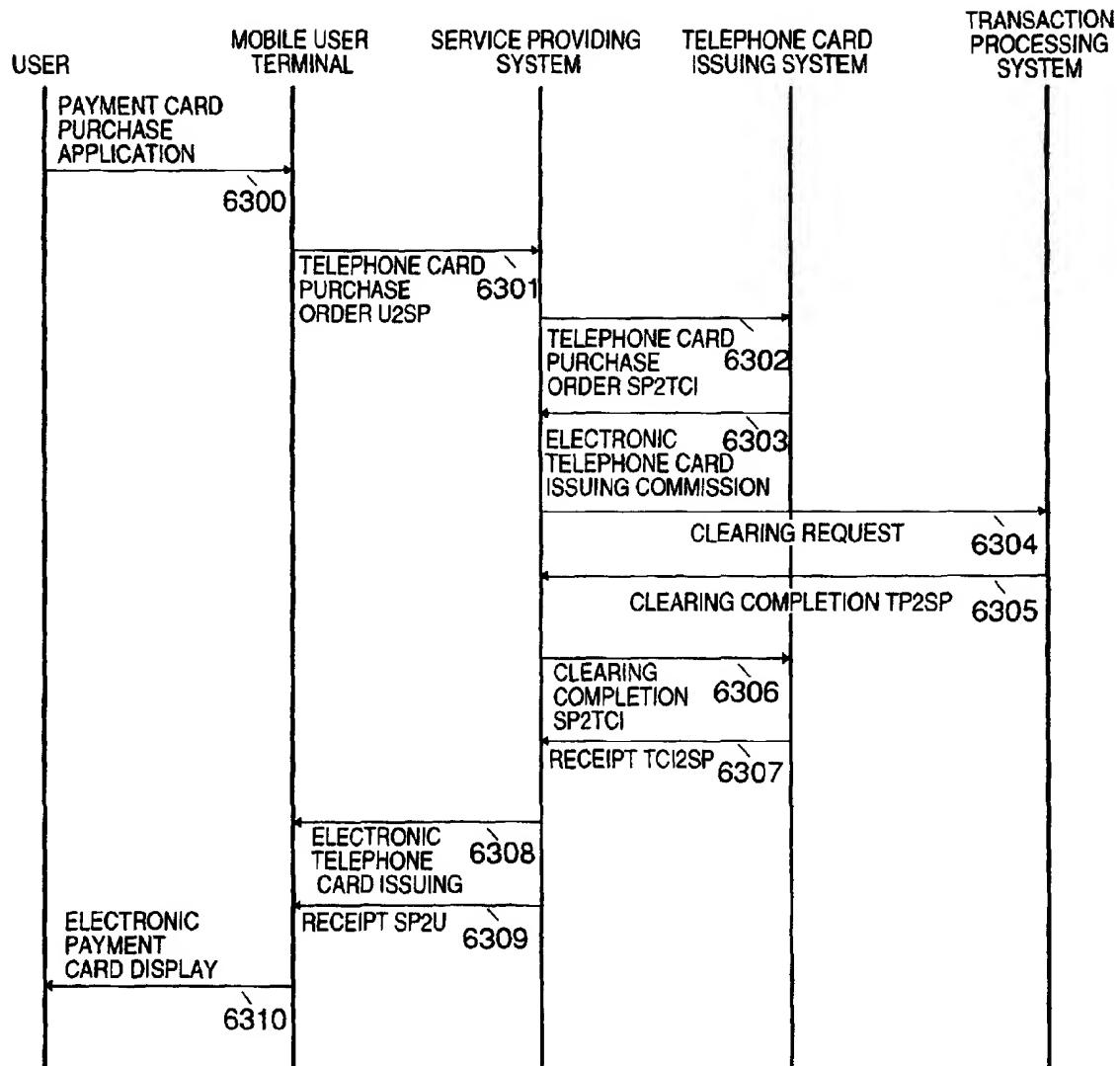


FIG. 64

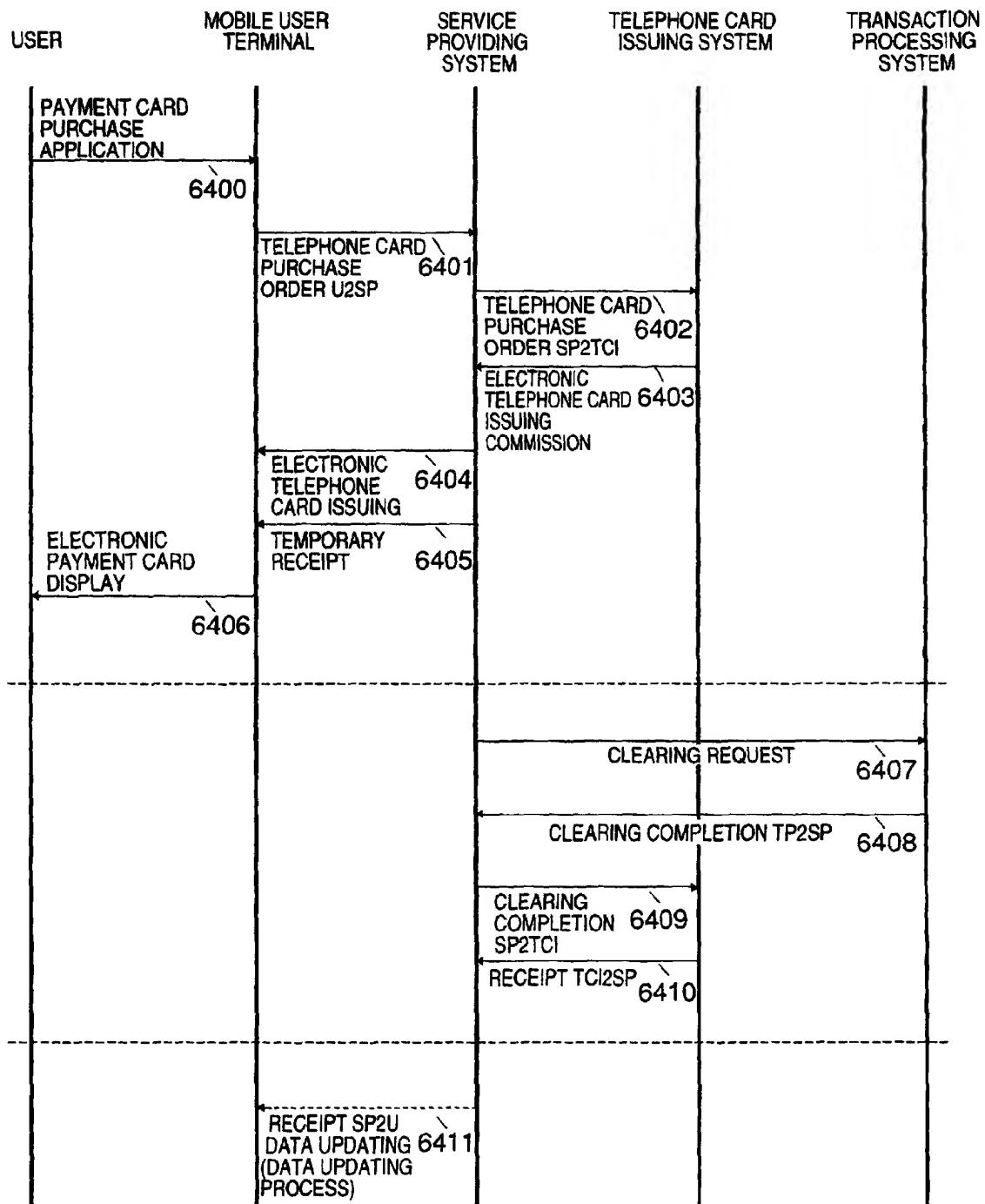


FIG. 65A

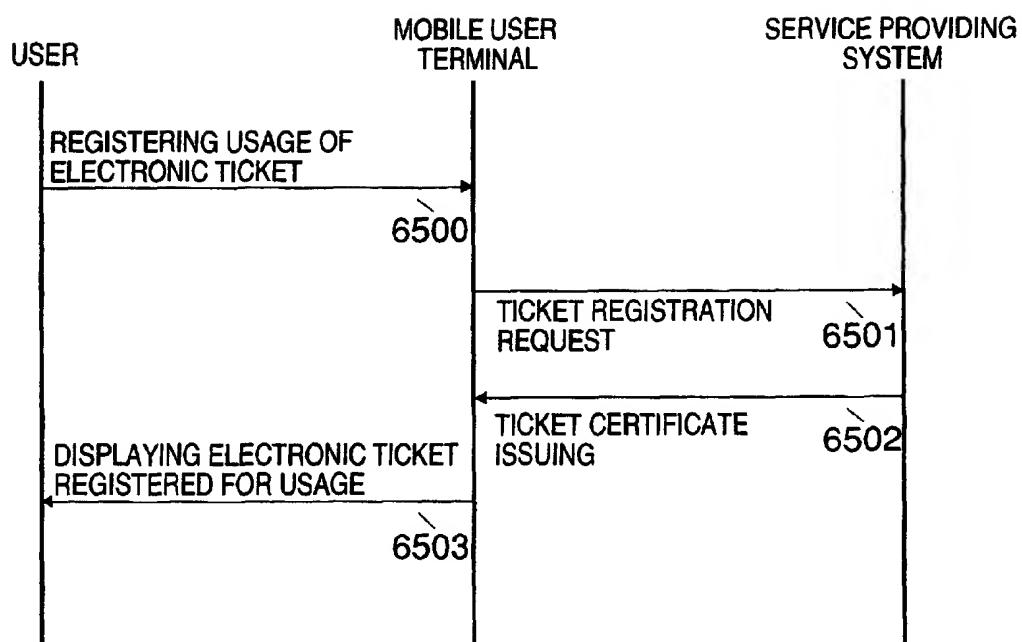


FIG. 65B

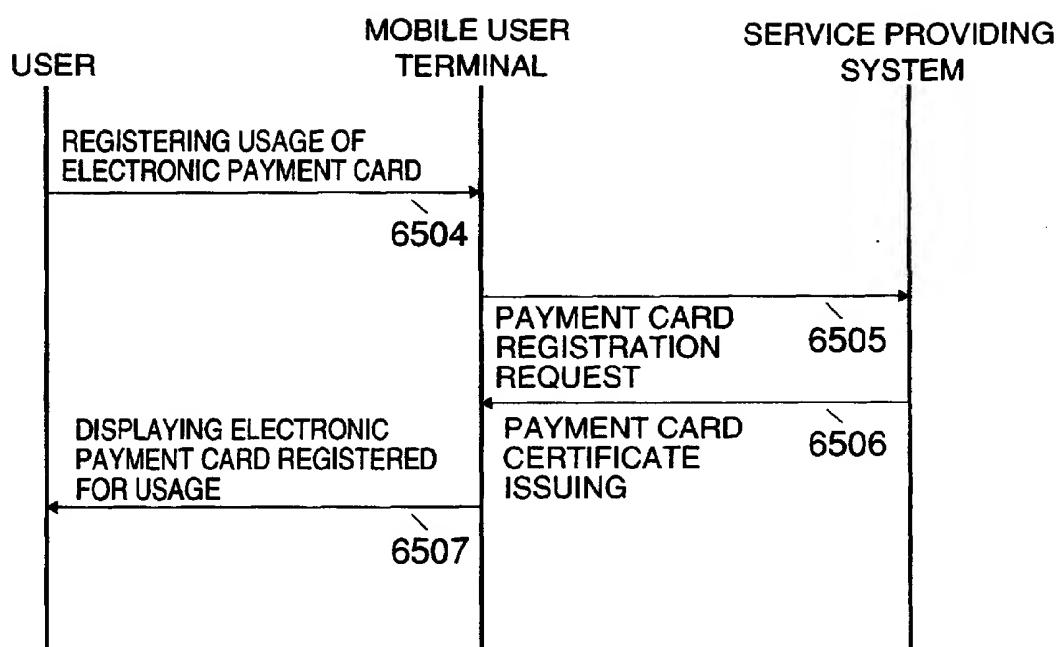


FIG. 65C

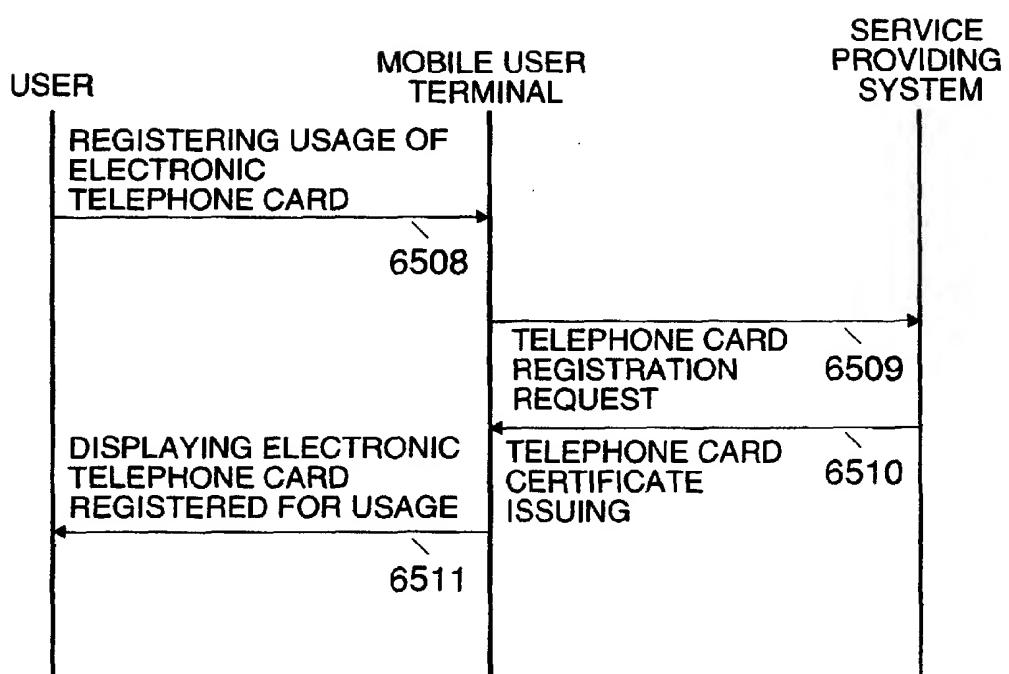


FIG. 66

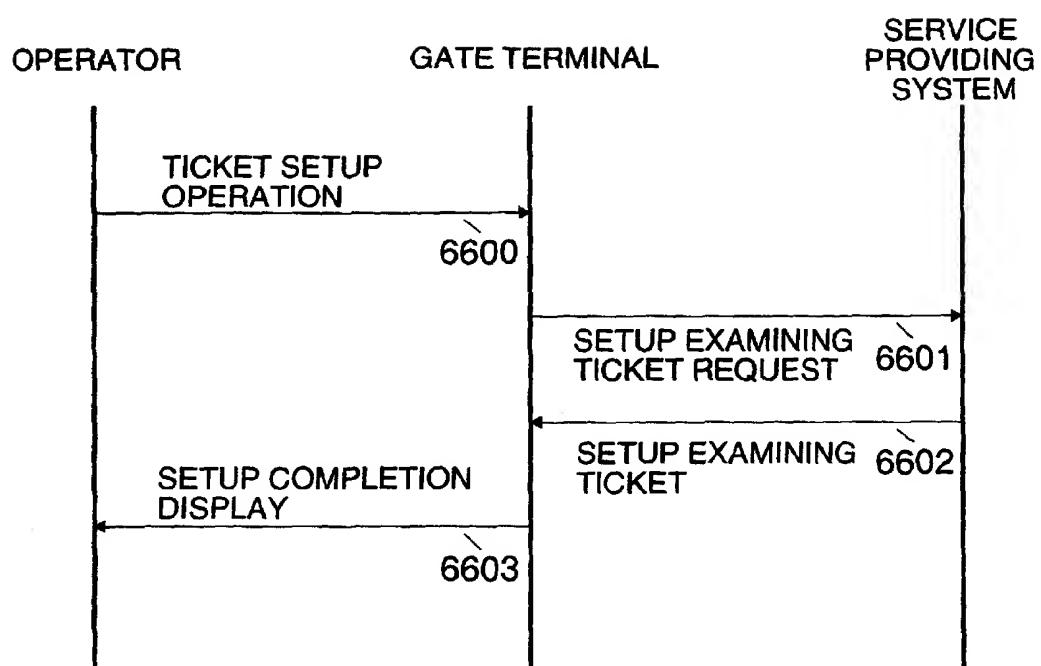


FIG. 67

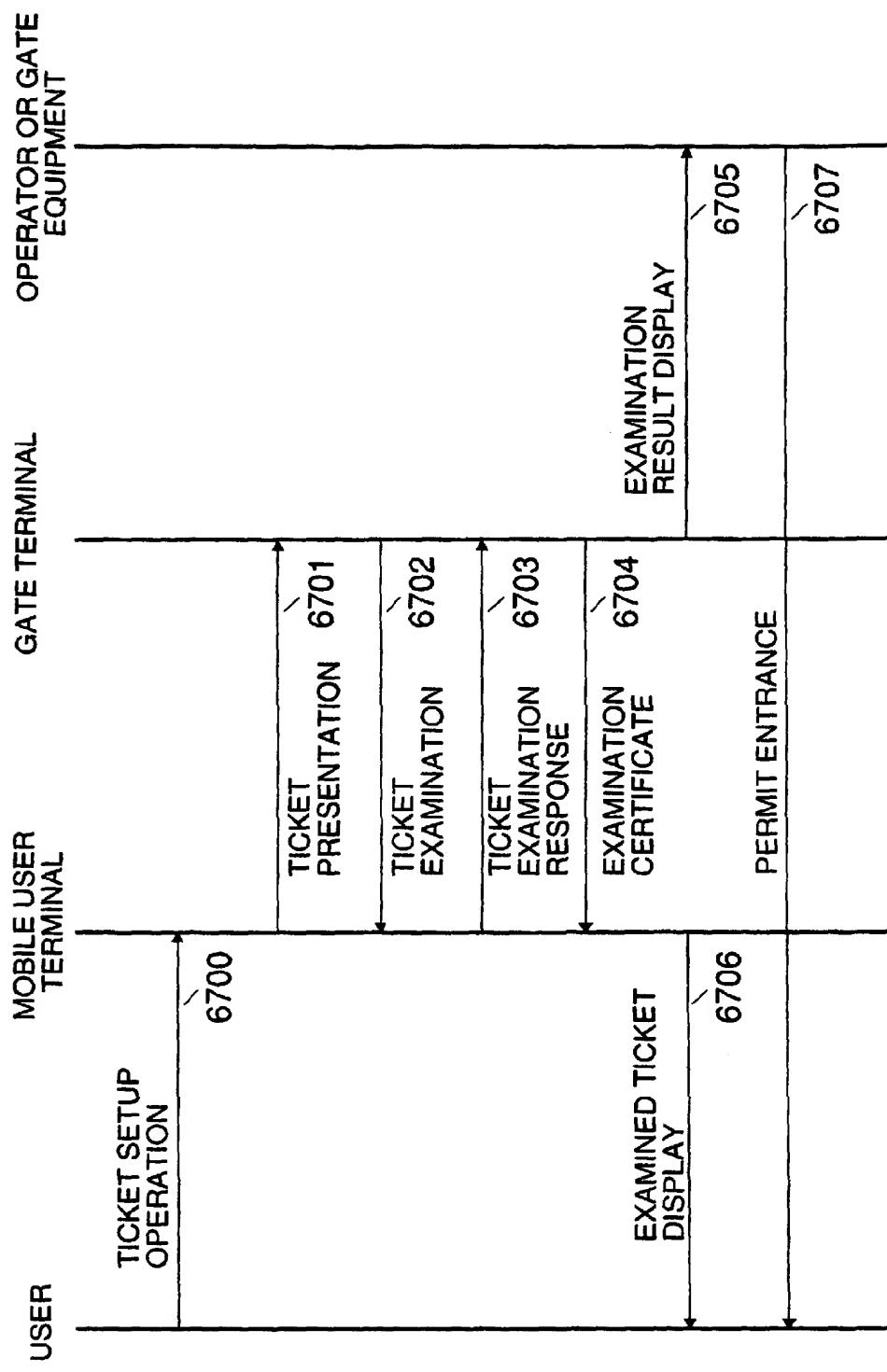


FIG. 68

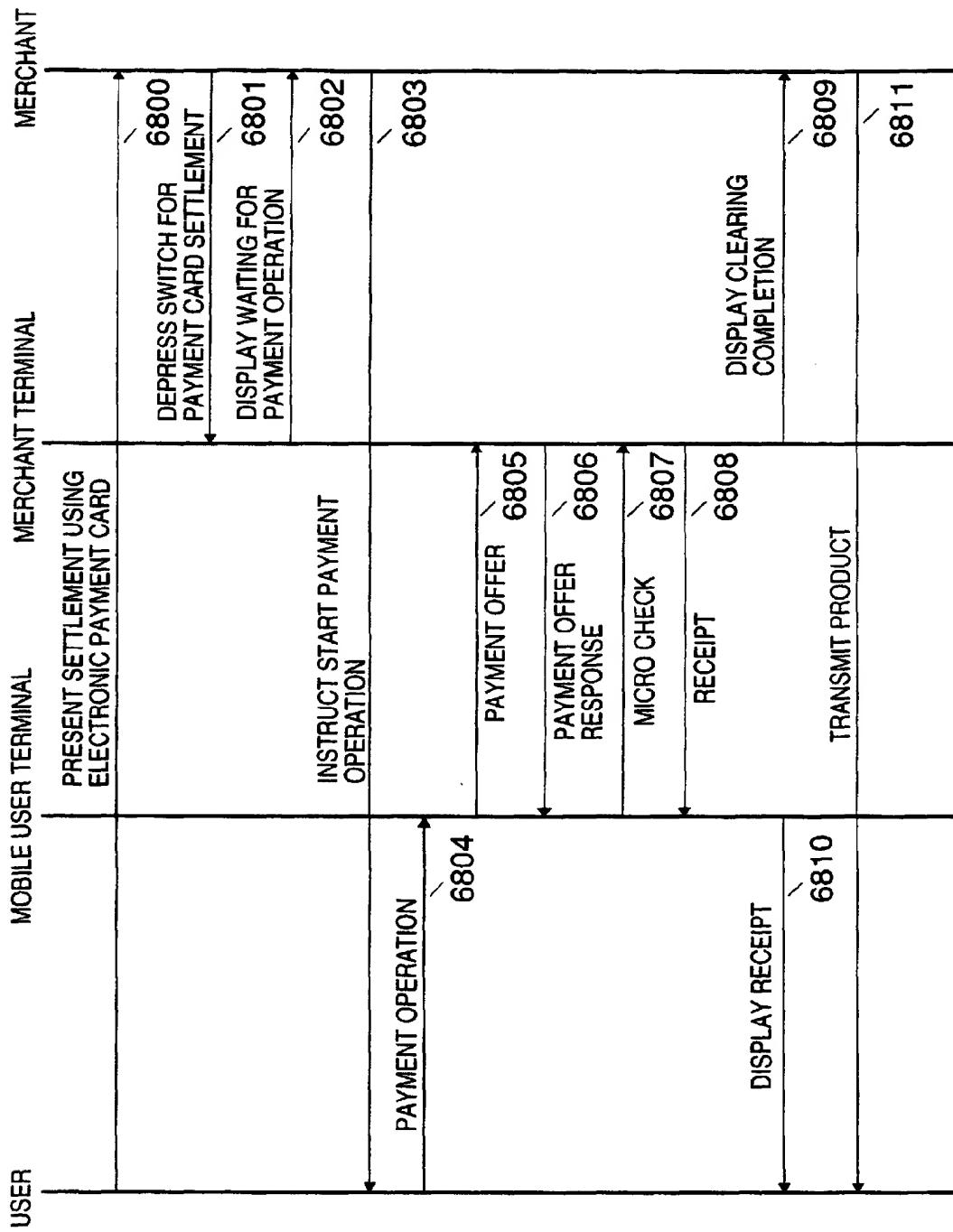


FIG. 69

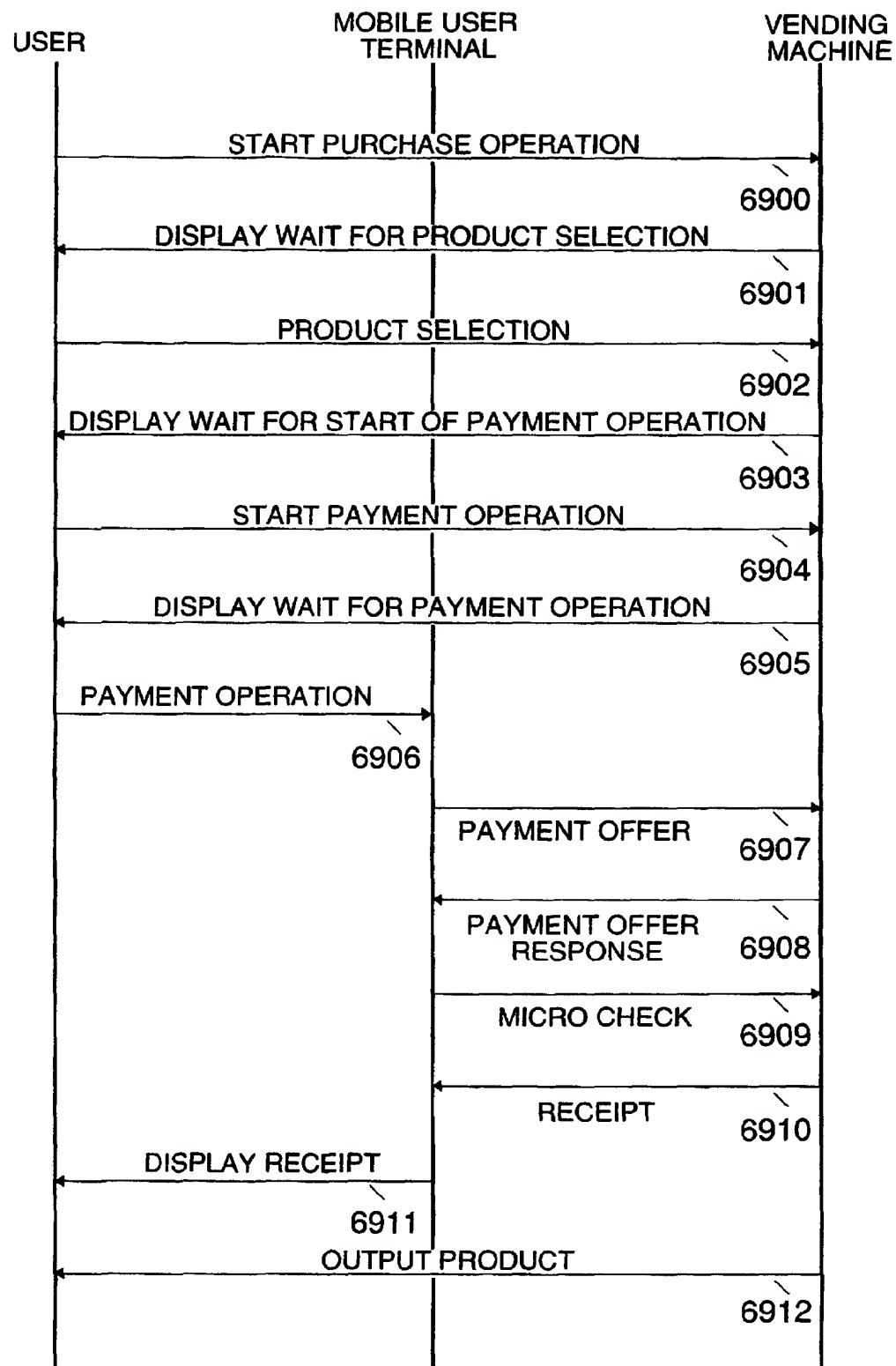


FIG. 70

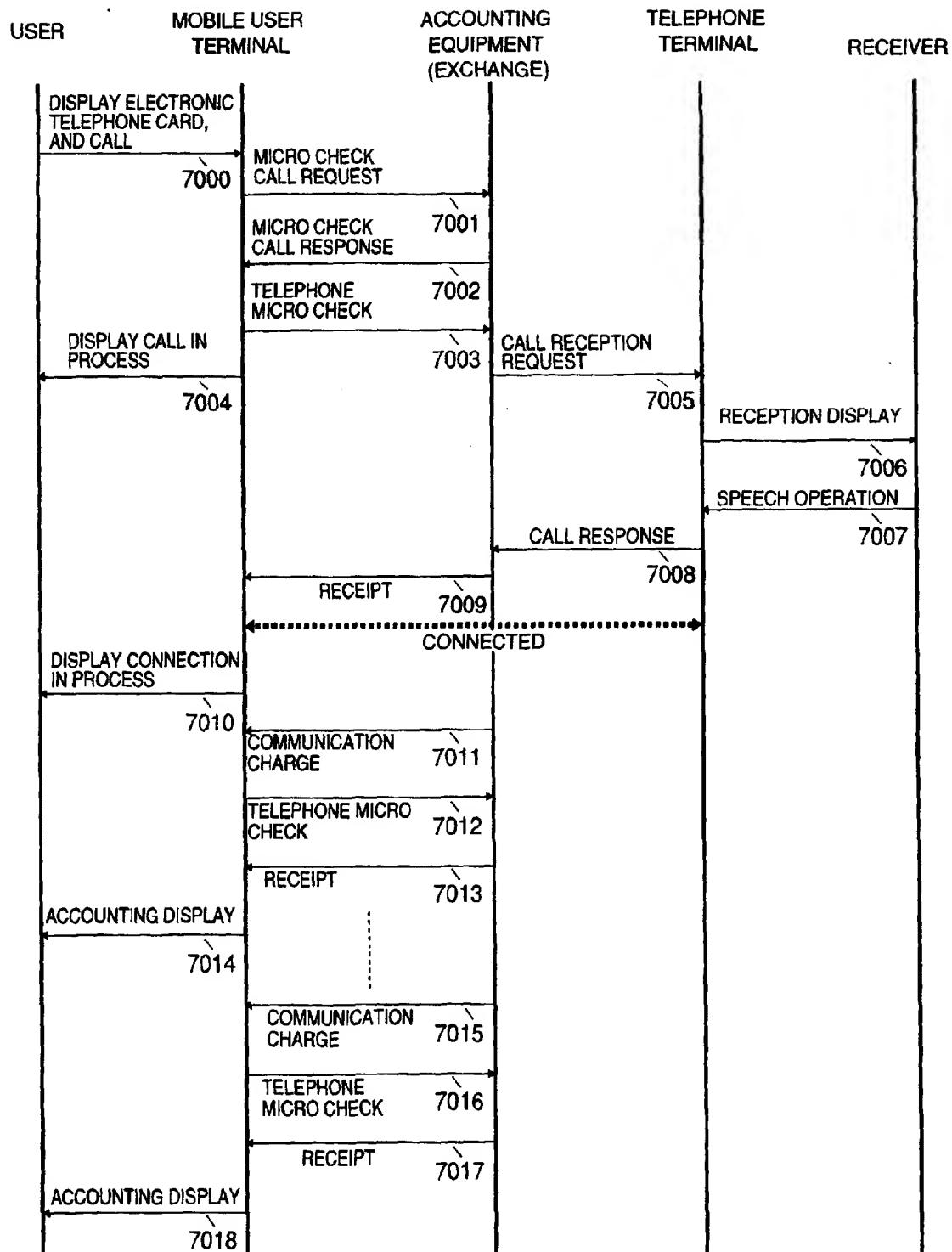


FIG. 71

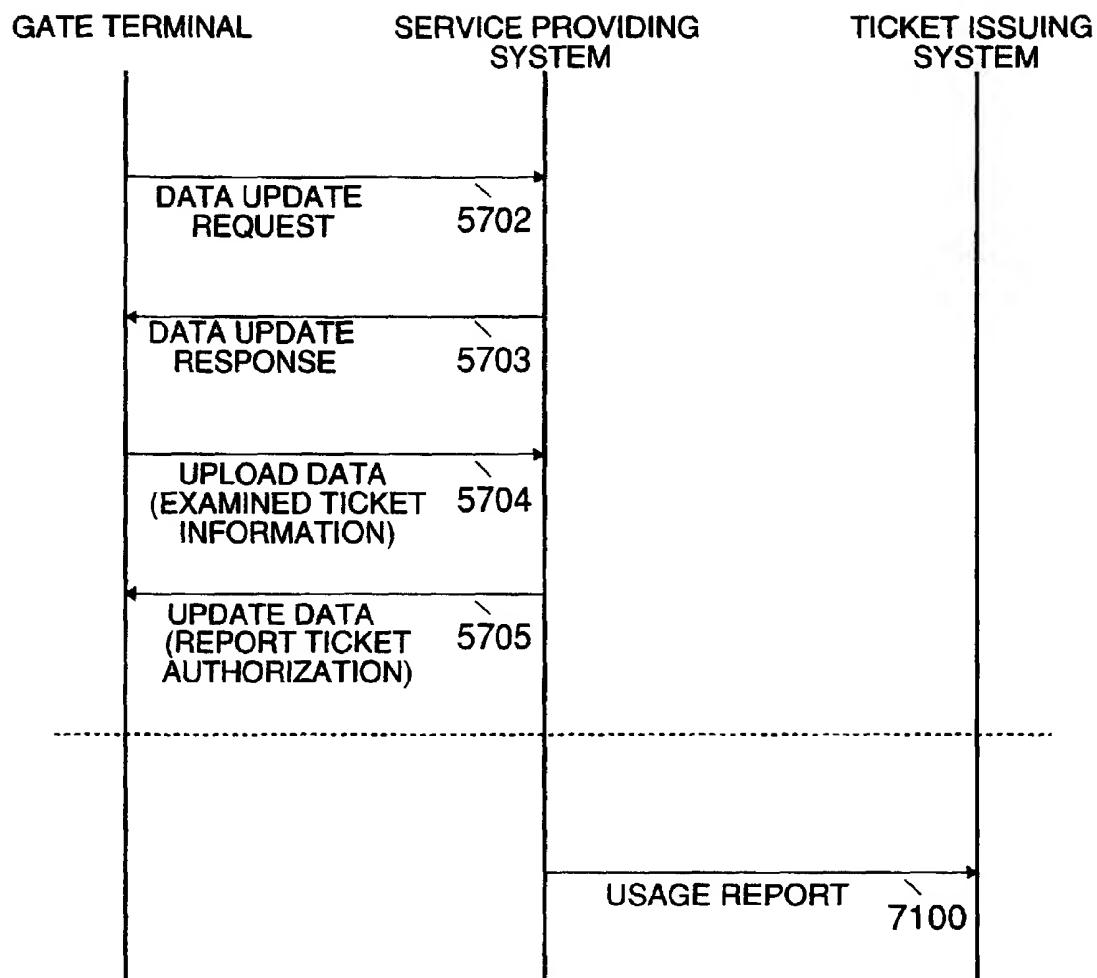
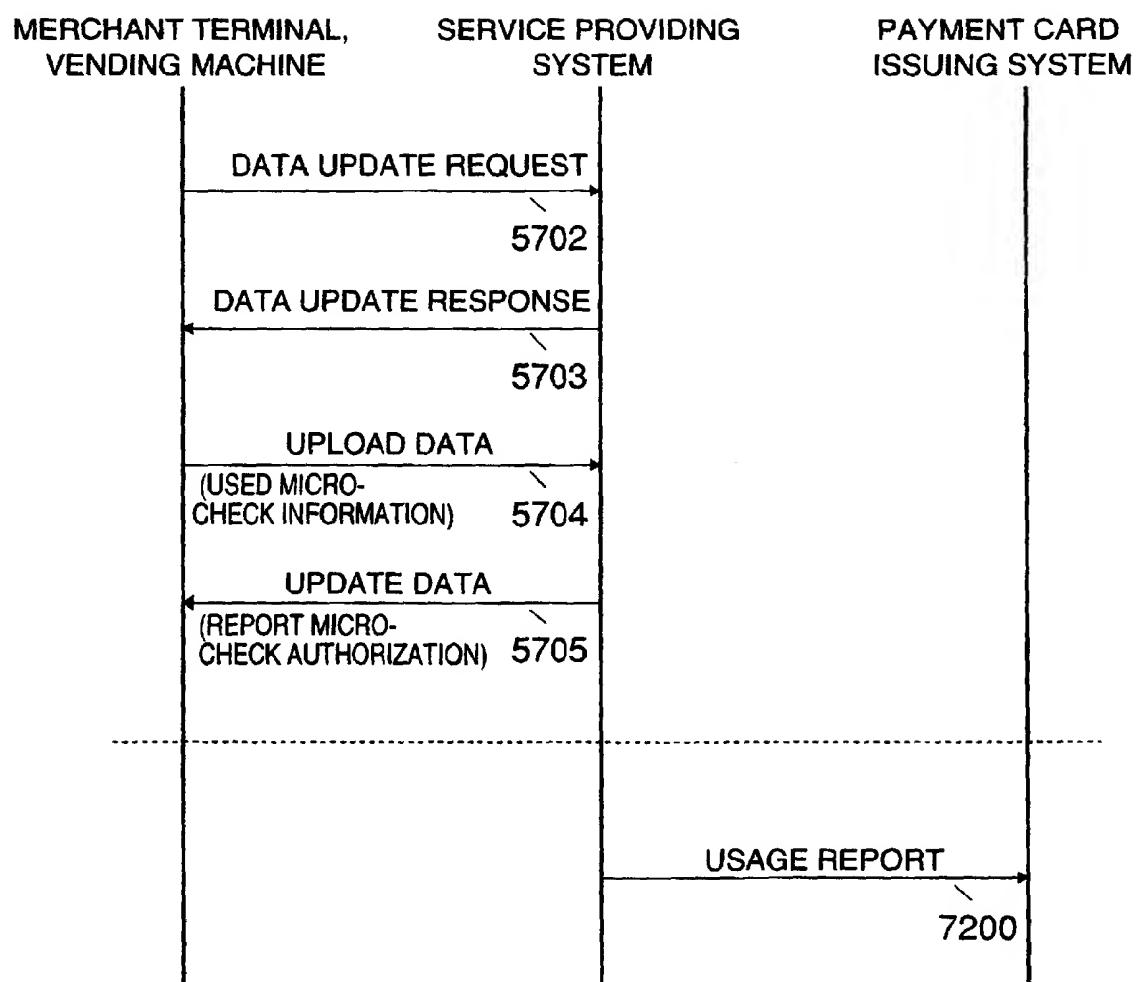


FIG. 72



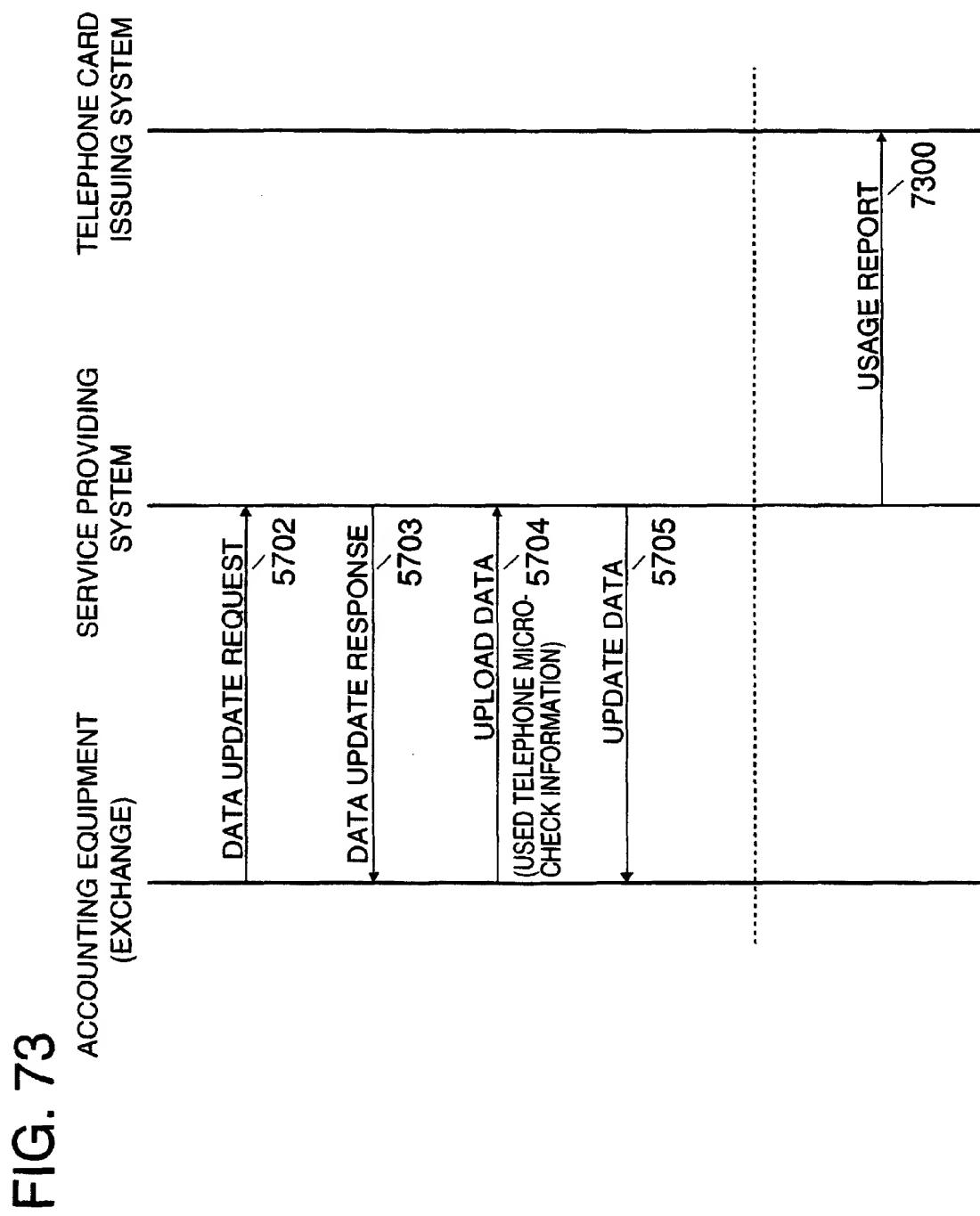


FIG. 74

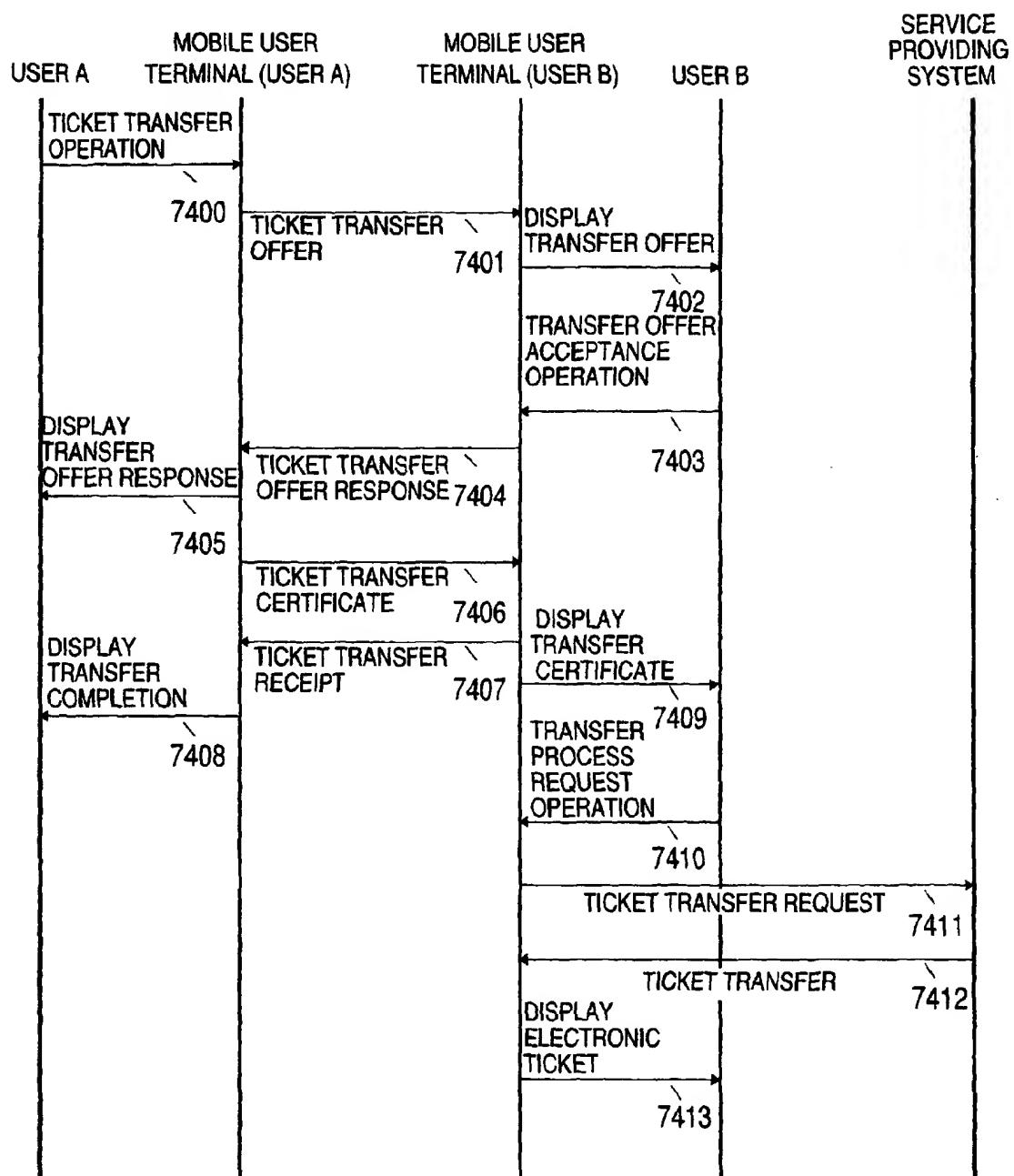


FIG. 75

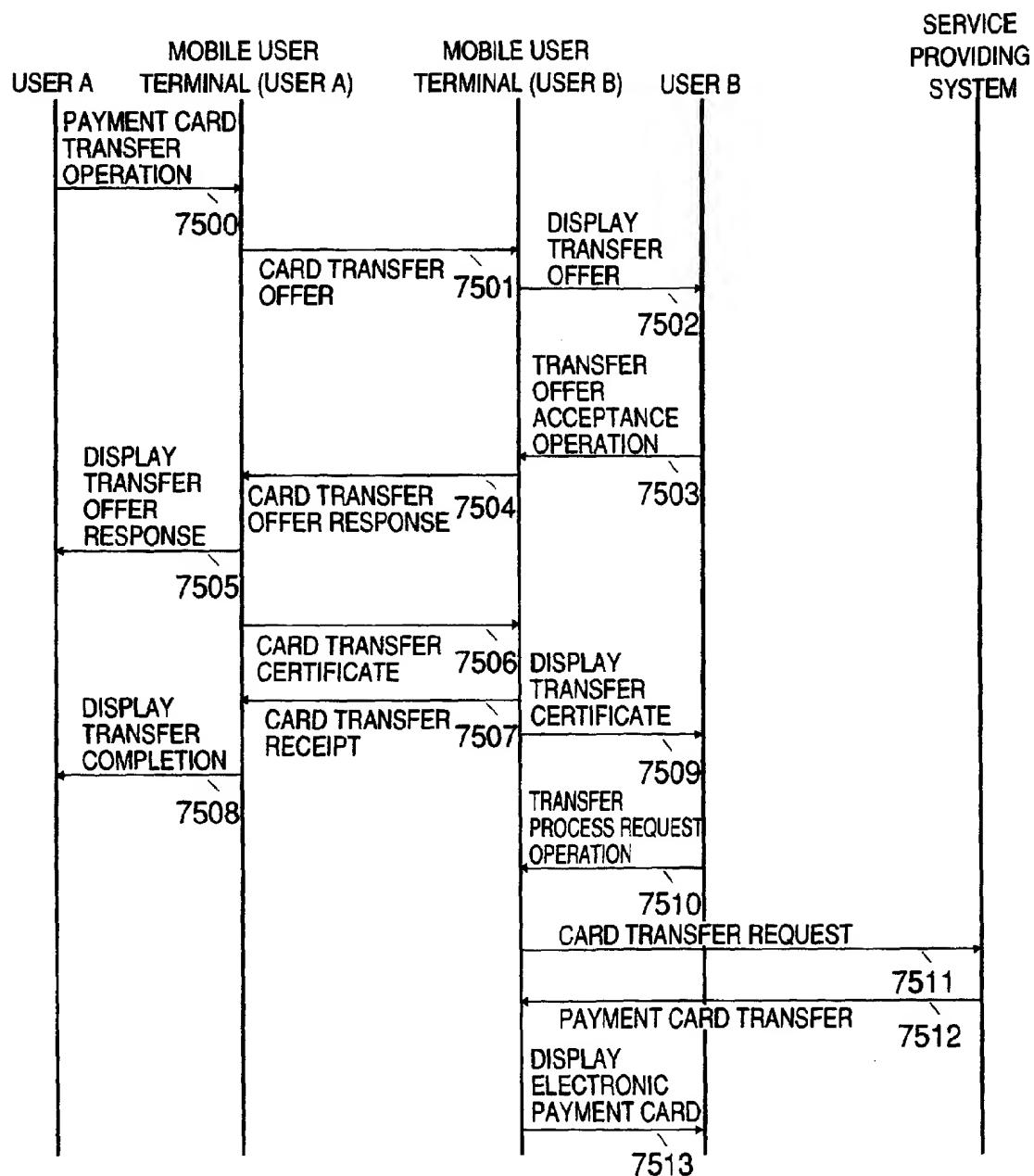


FIG. 76

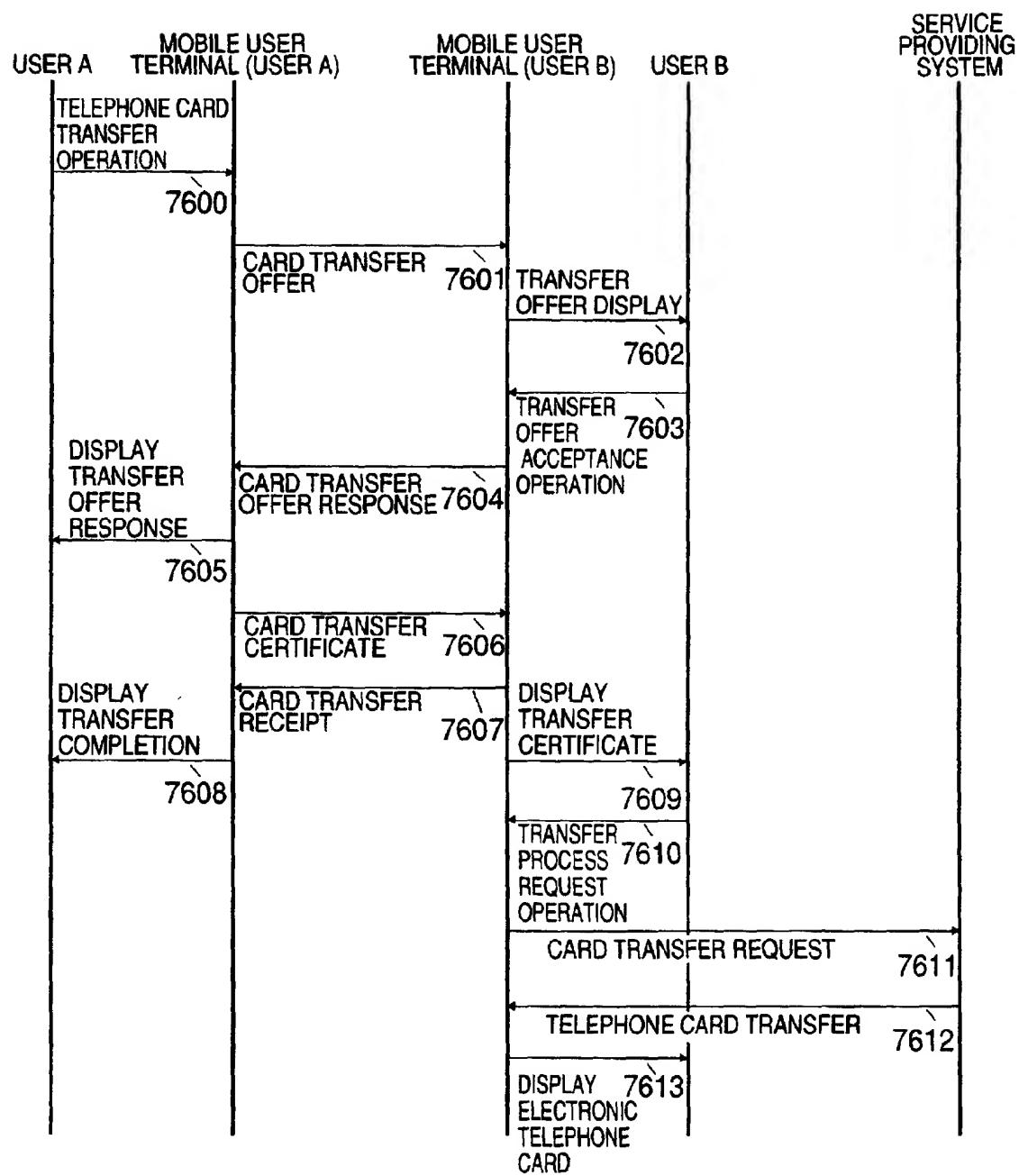


FIG. 77

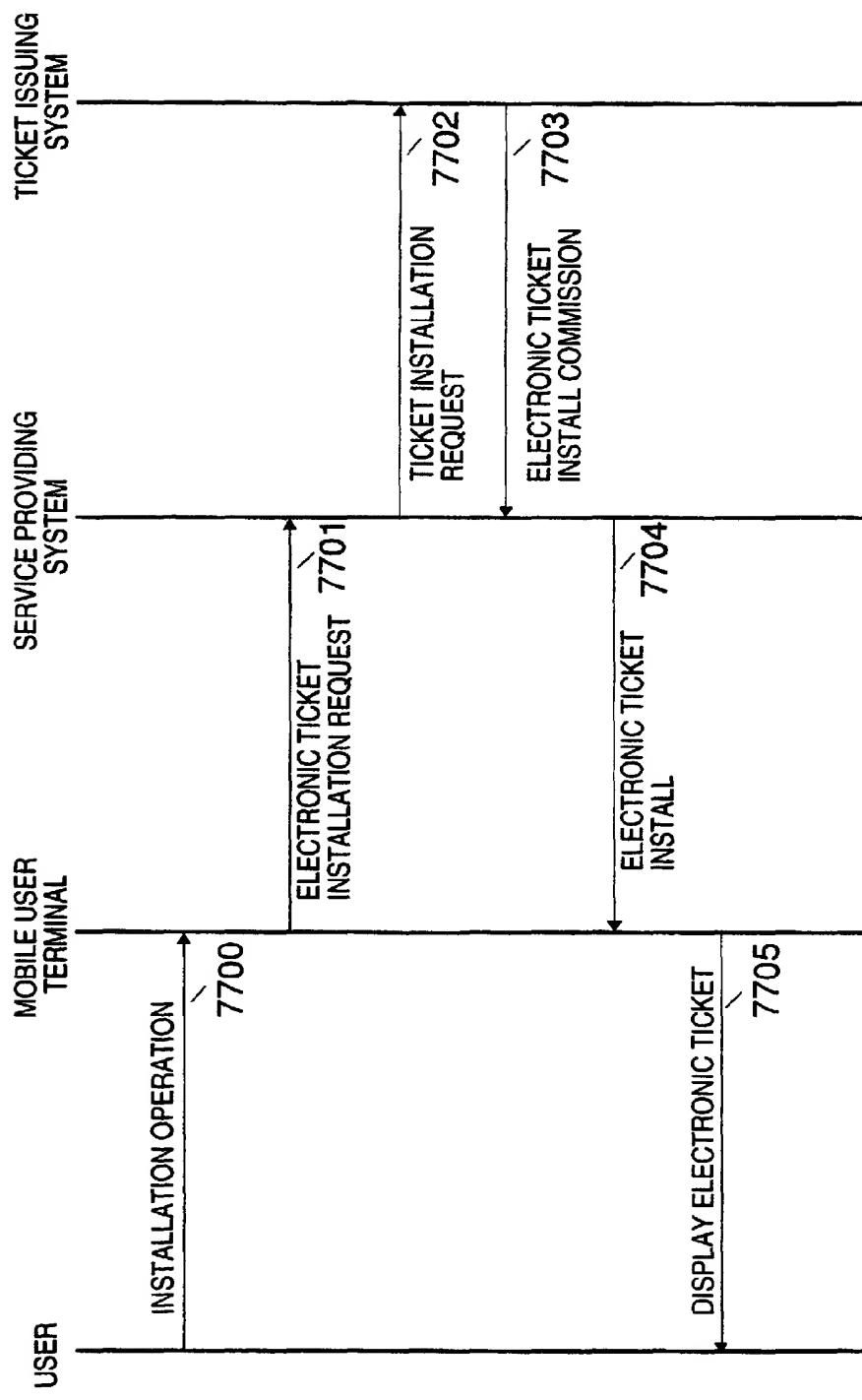


FIG. 78

PAYMENT CARD ISSUING  
SYSTEM

MOBILE USER TERMINAL

USER

INSTALLATION OPERATION

SERVICE PROVIDING  
SYSTEM

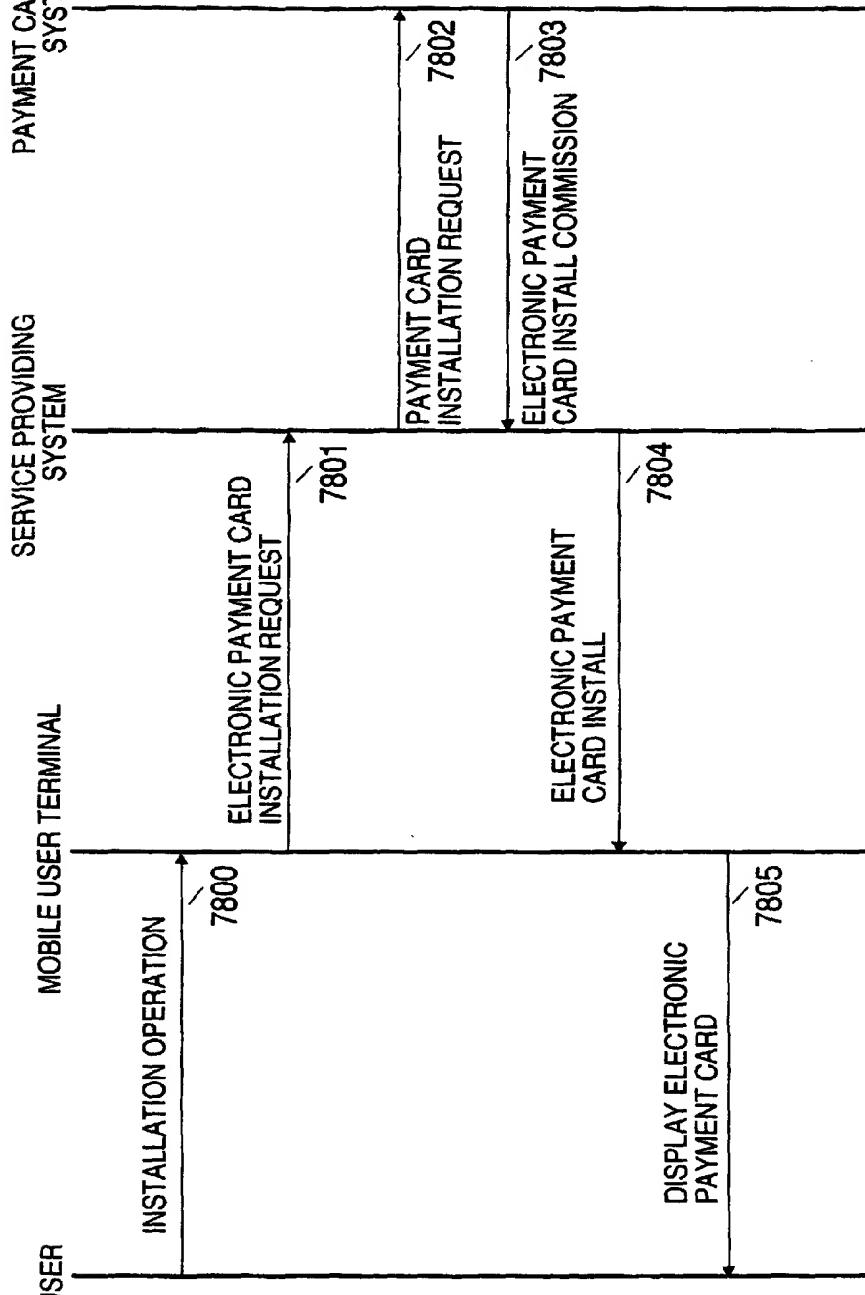


FIG. 79

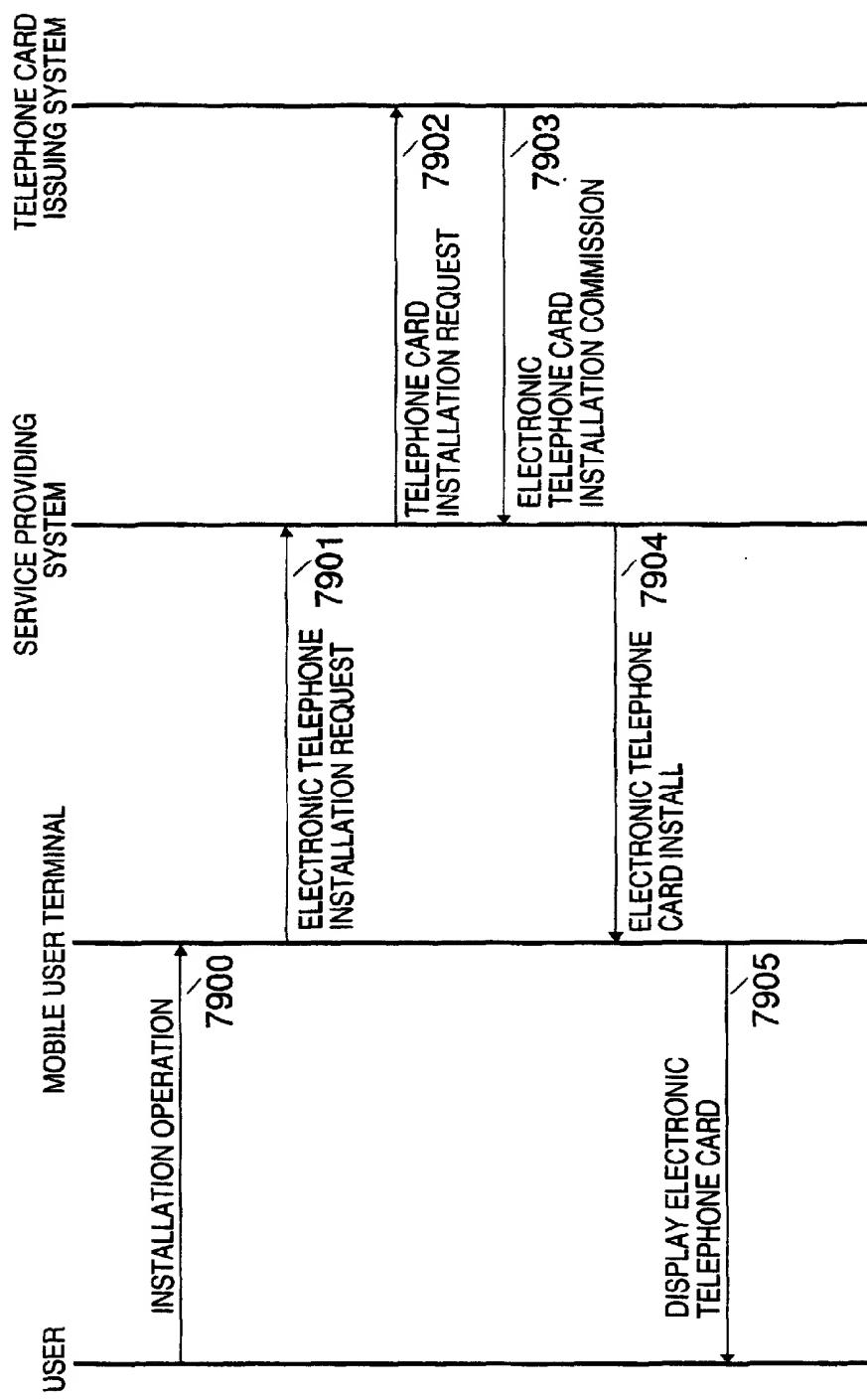


FIG. 80

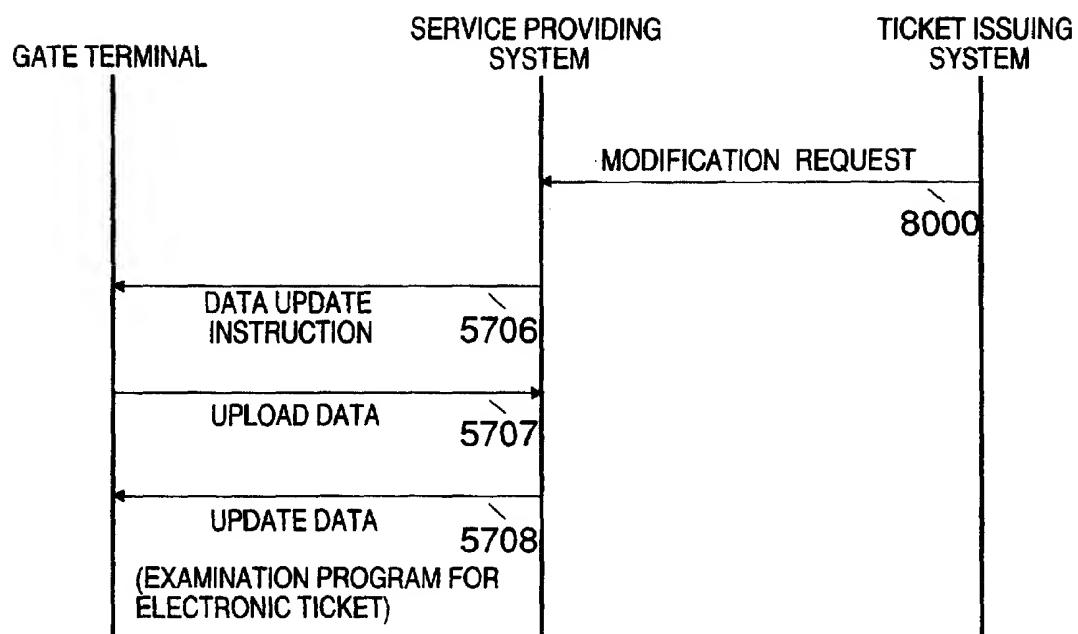


FIG. 81

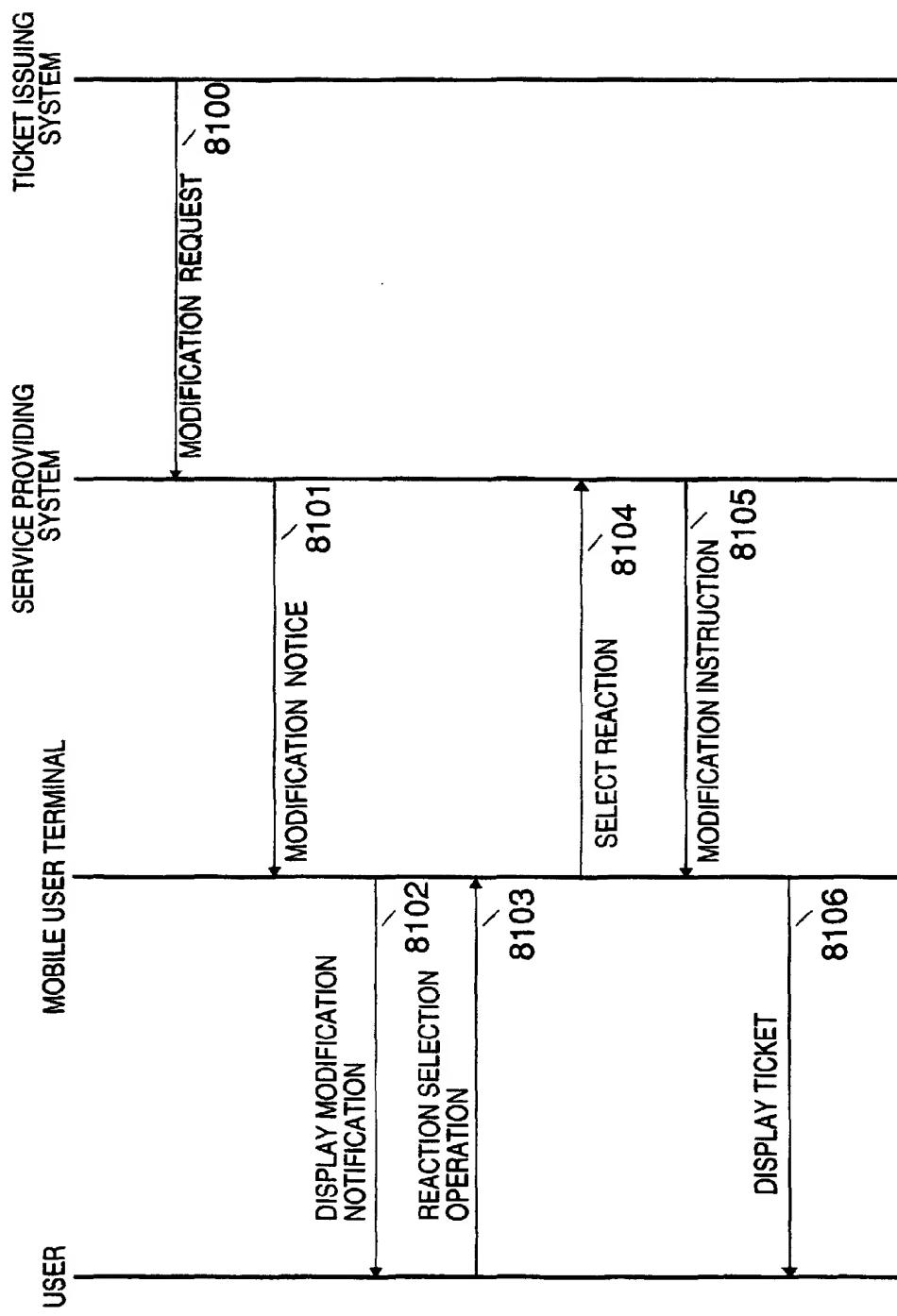


FIG. 82

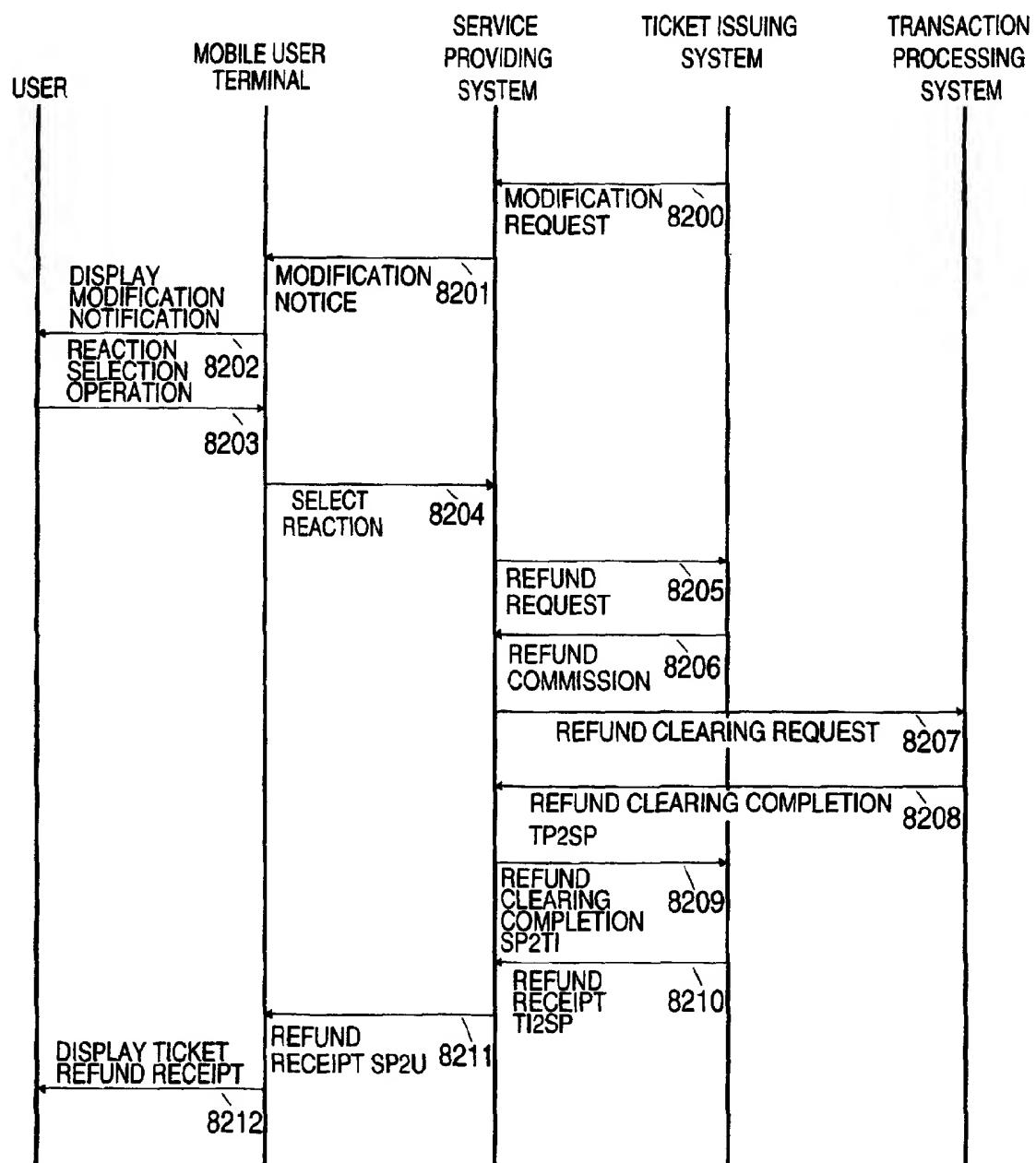


FIG. 83

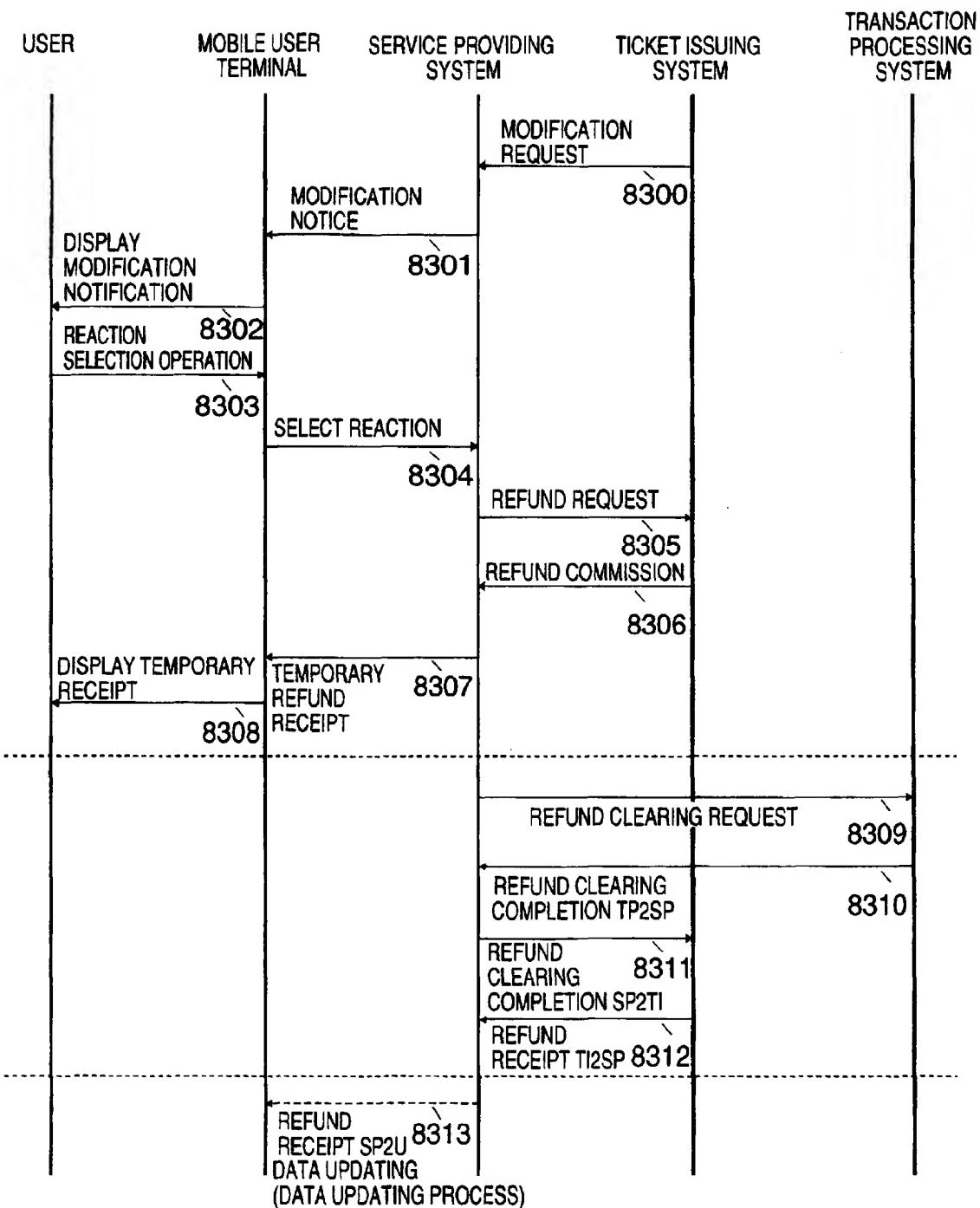


FIG. 84

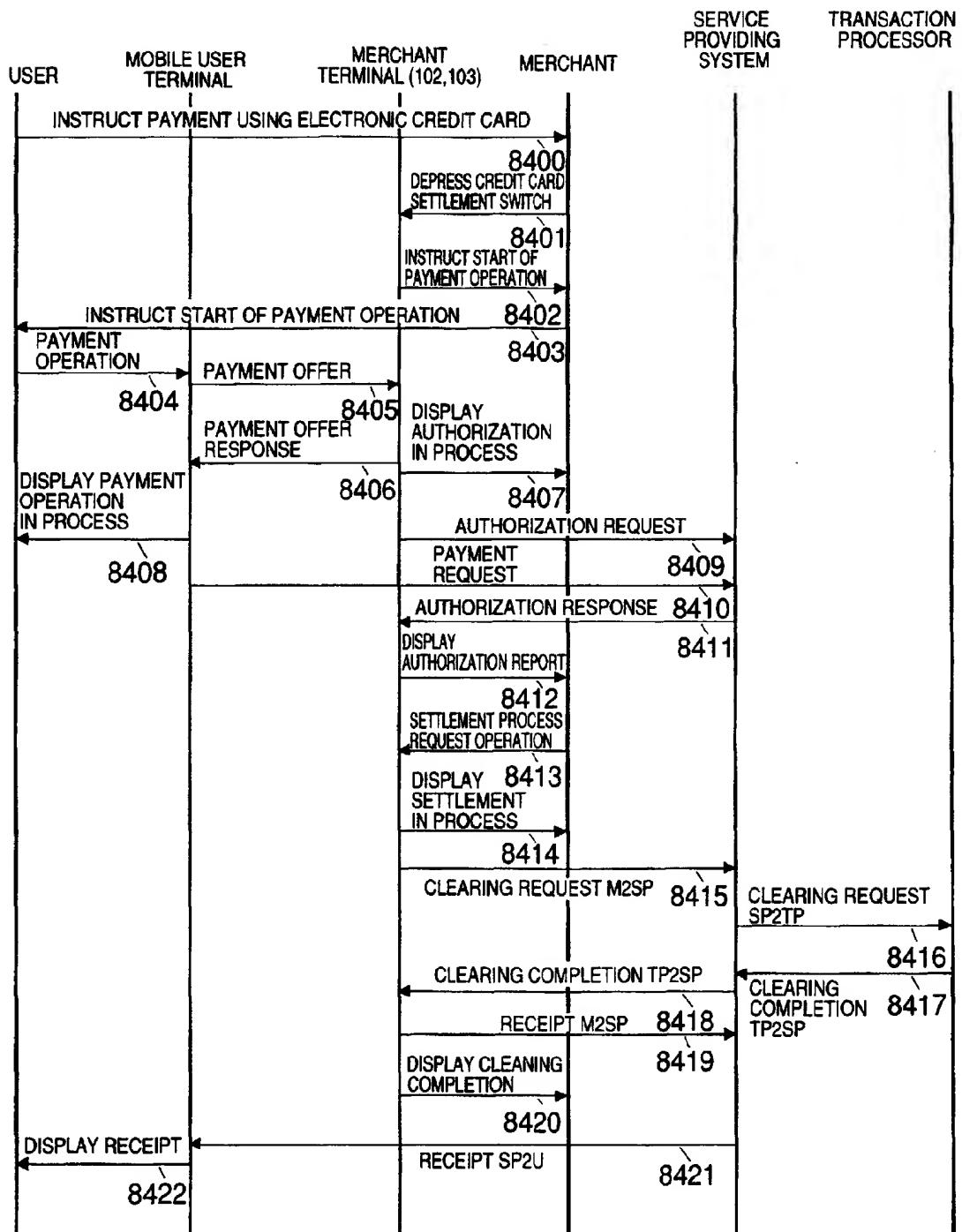


FIG.85A

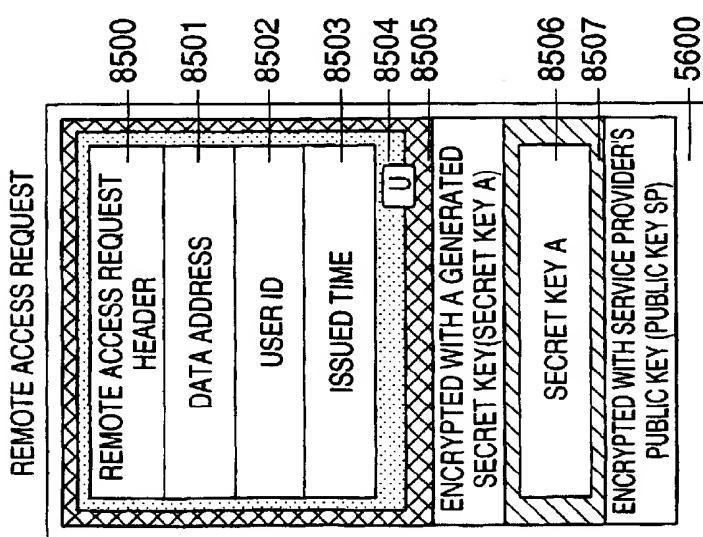


FIG.85B

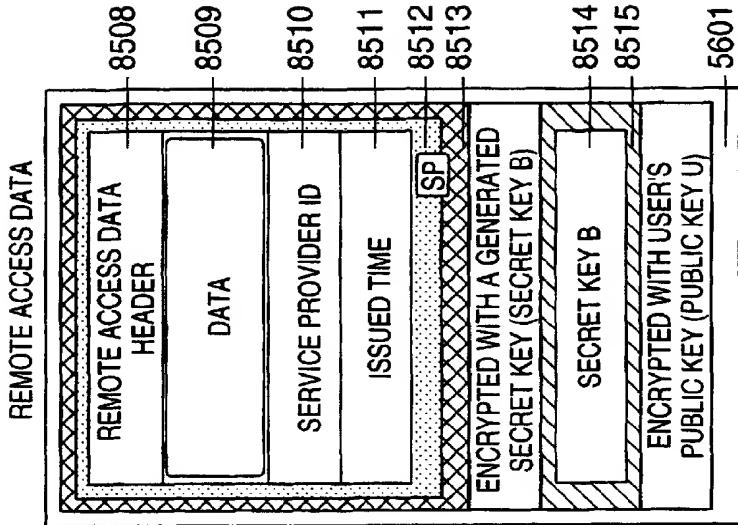


FIG.86A

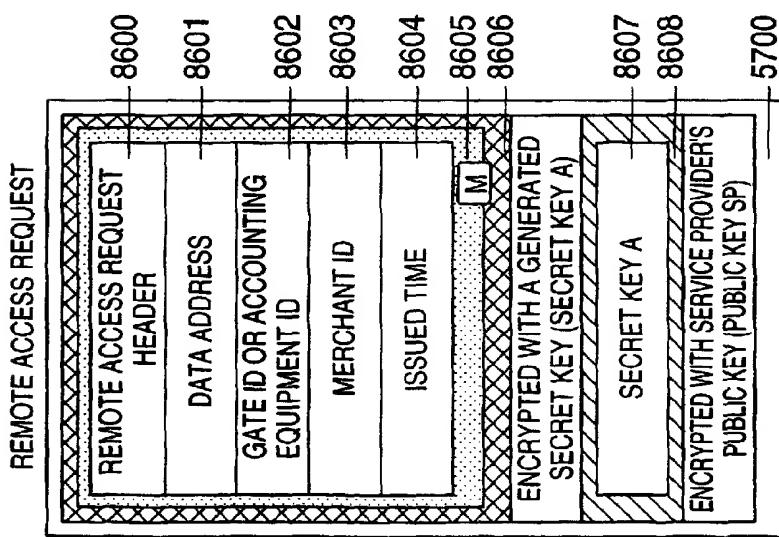


FIG.86B

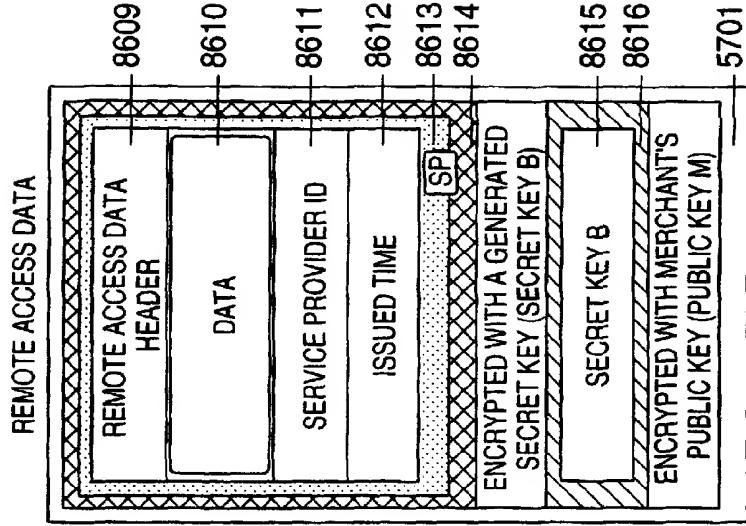


FIG.87A

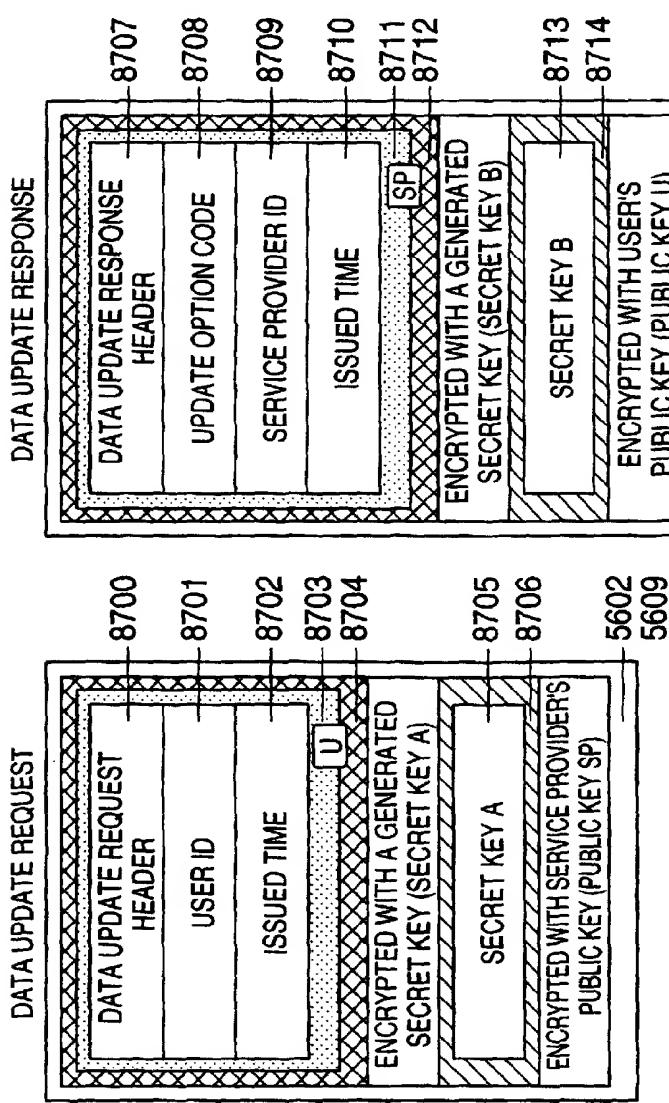


FIG.87B

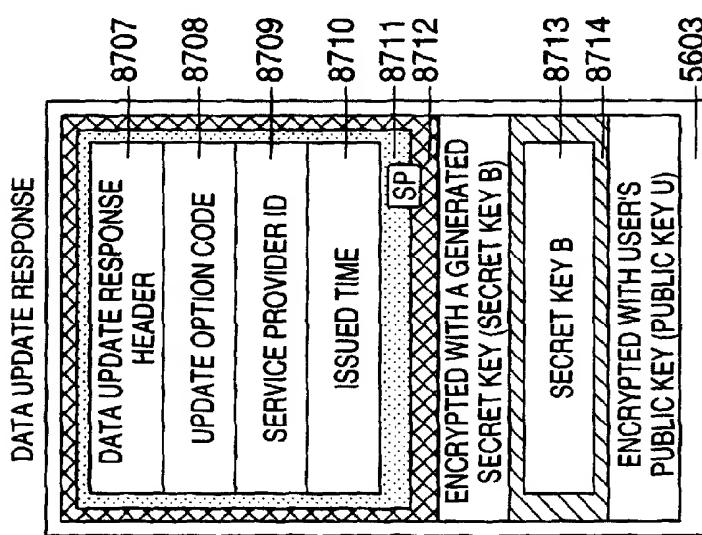


FIG.87C

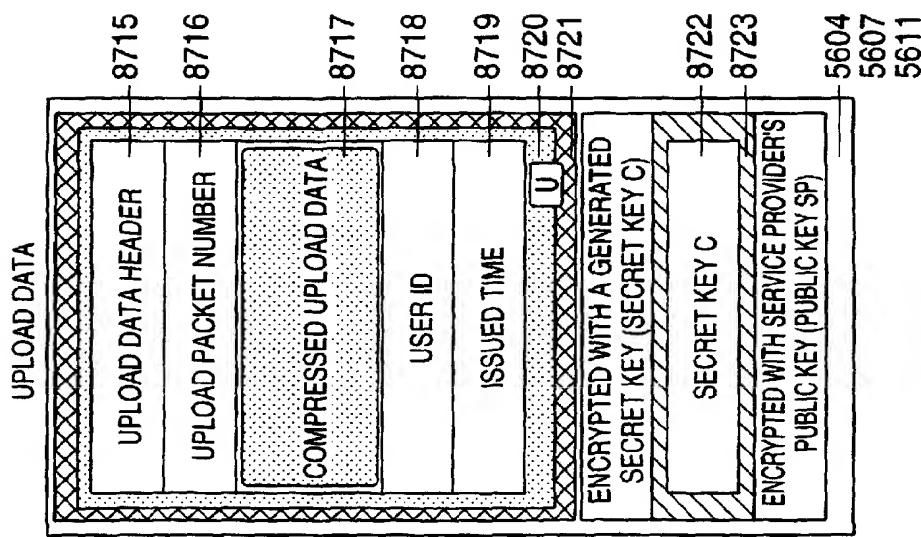


FIG.87D

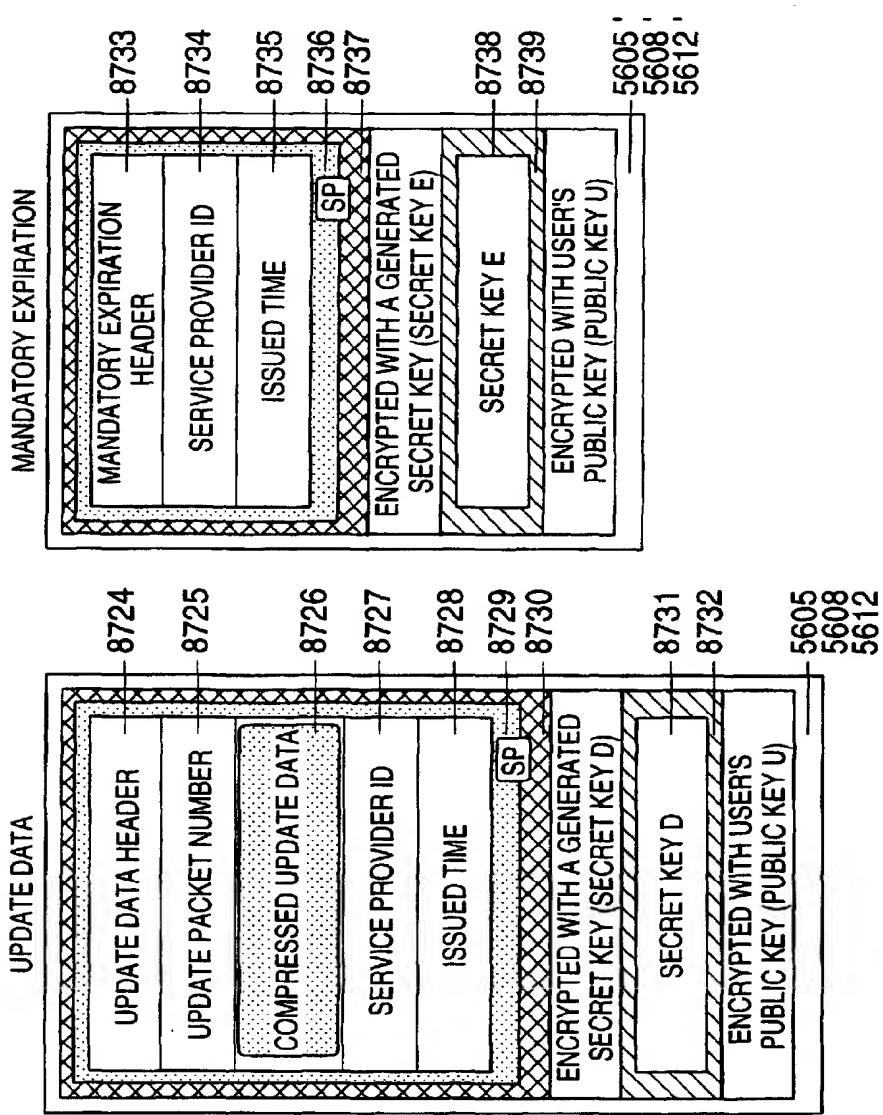


FIG.87E

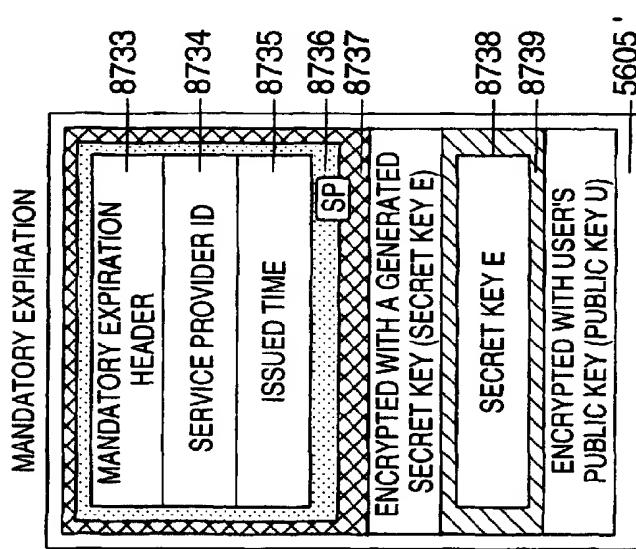


FIG.87F

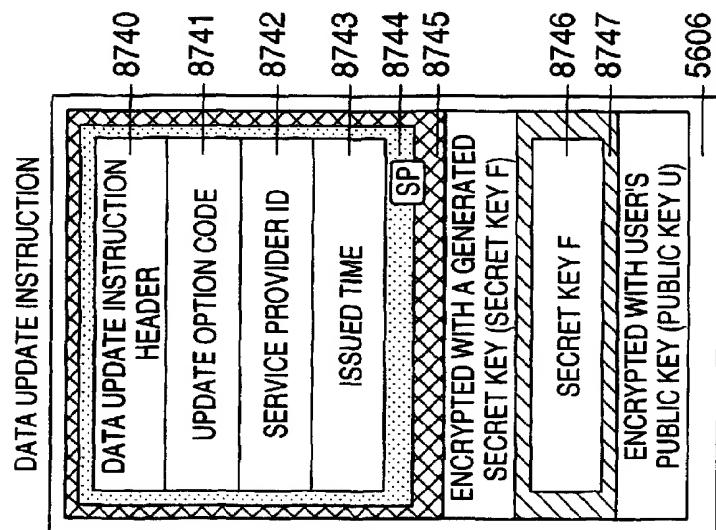


FIG.88A

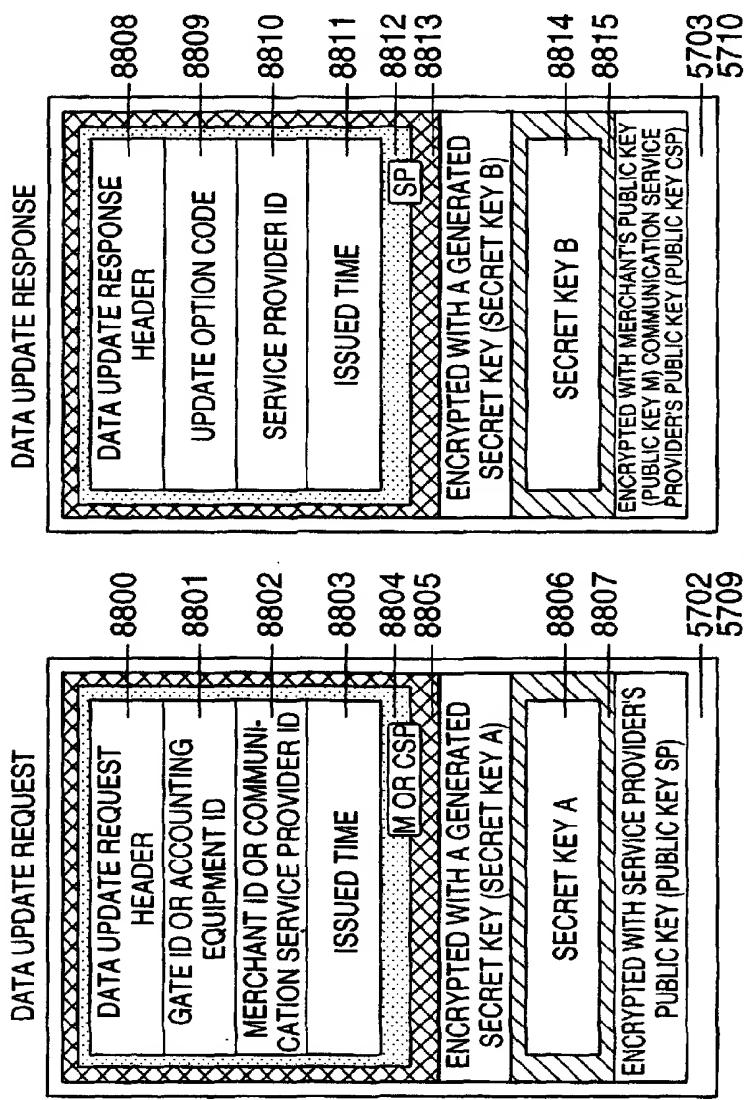


FIG.88B

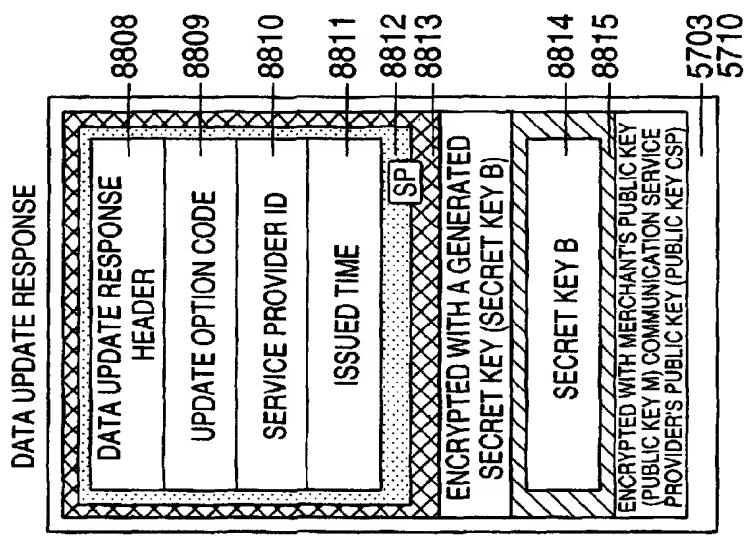


FIG.88C

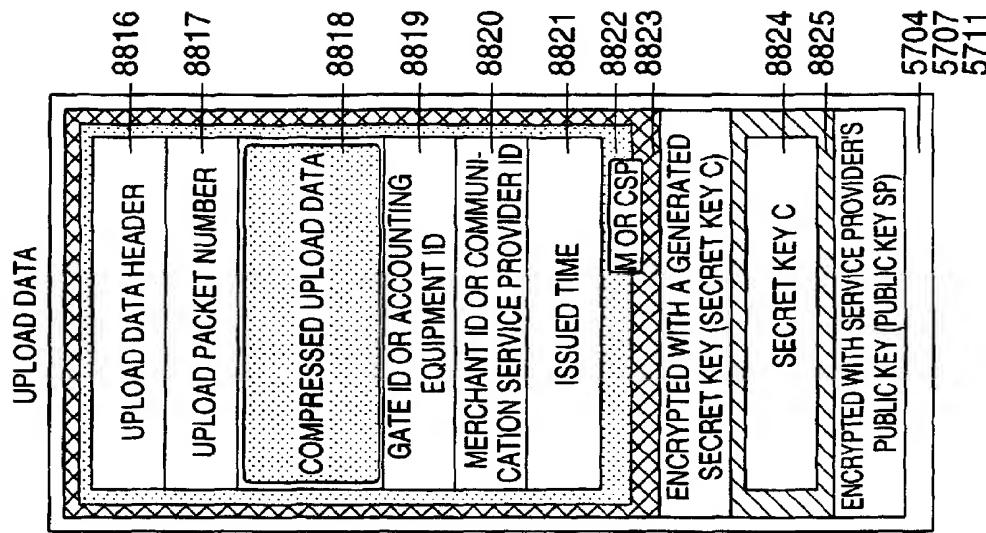


FIG.88D

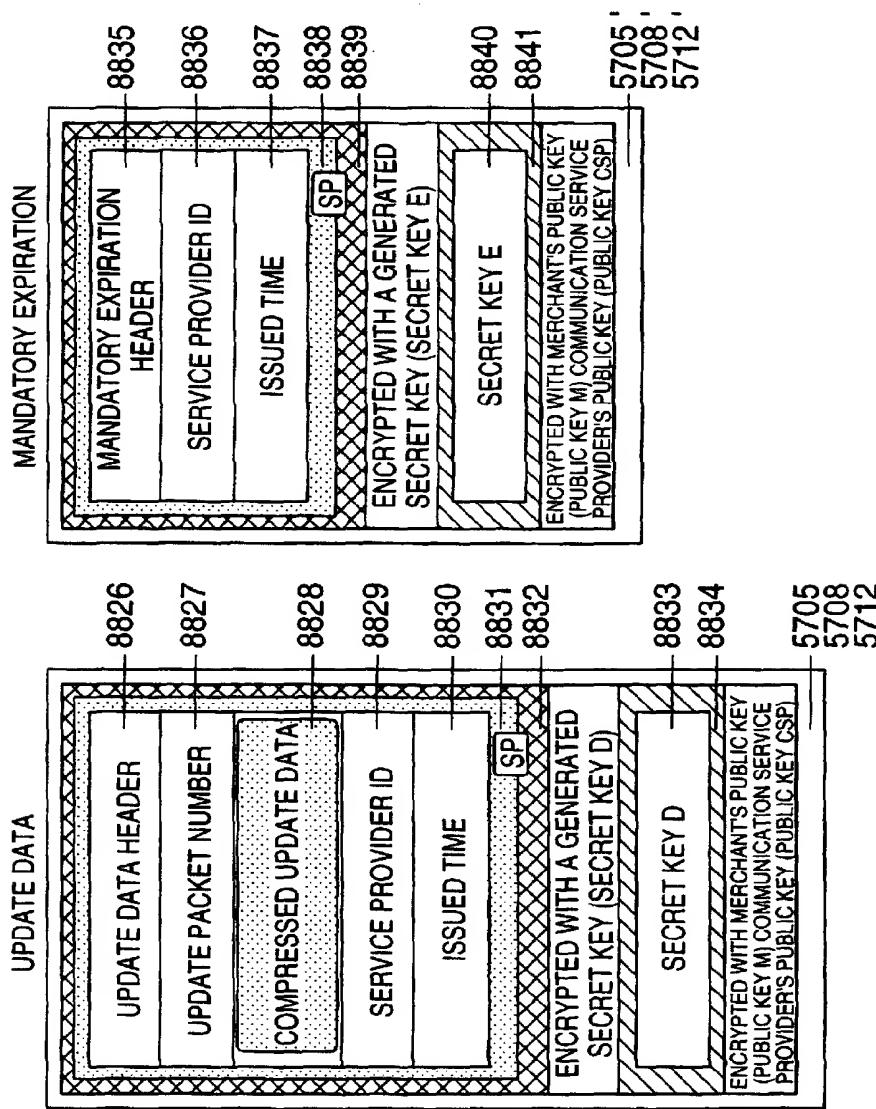


FIG.88E

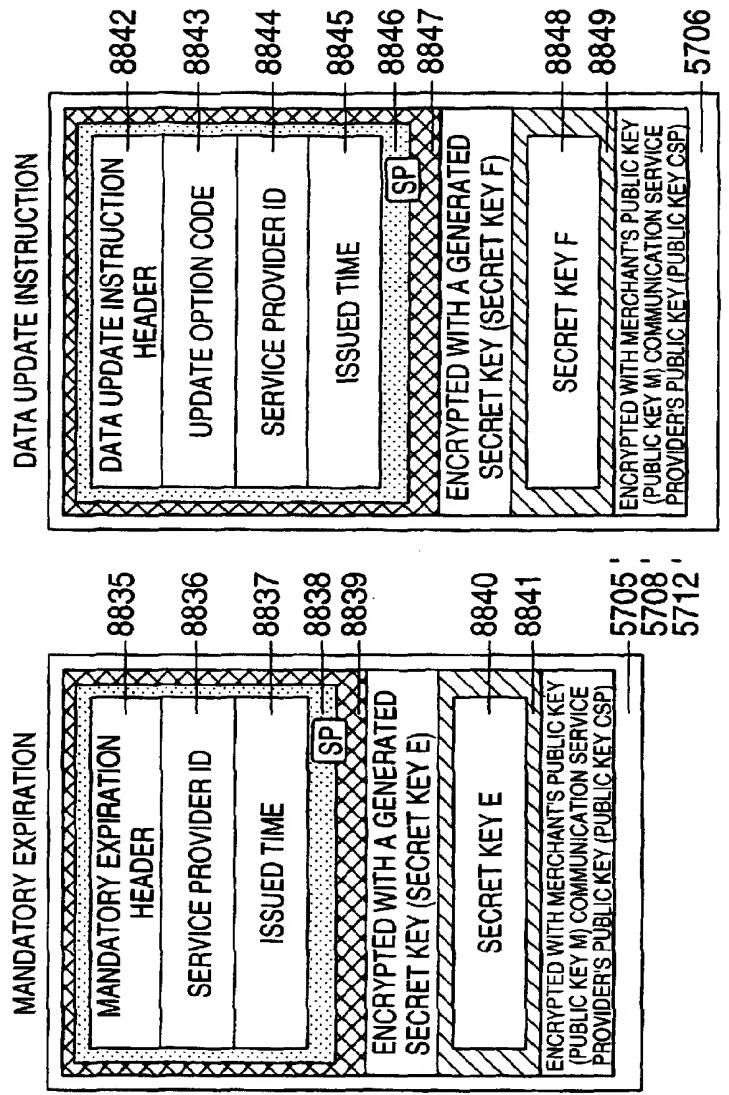


FIG.88F

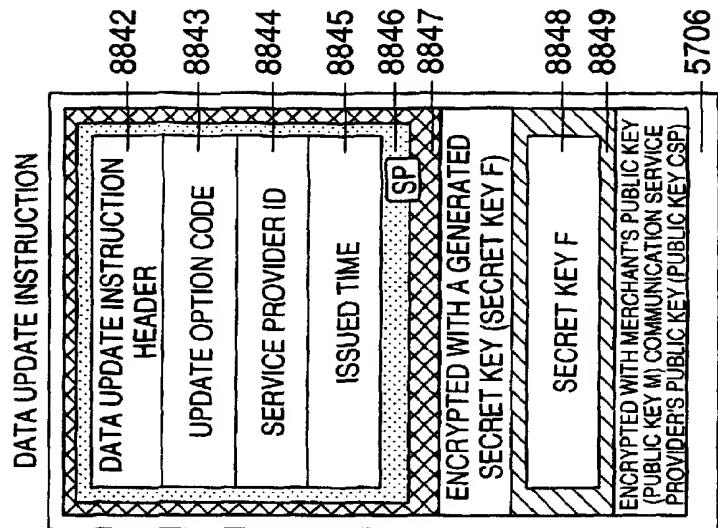


FIG.89A

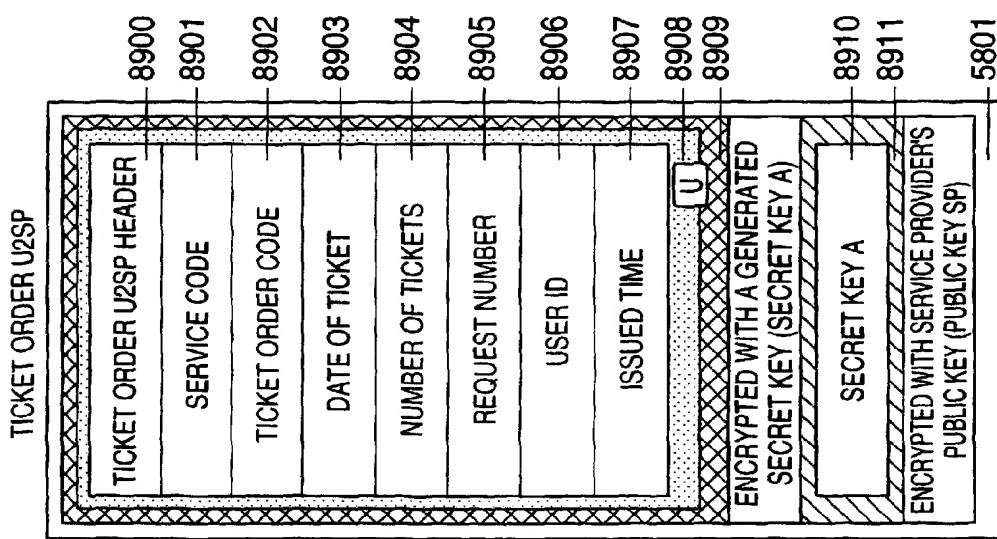


FIG.89B

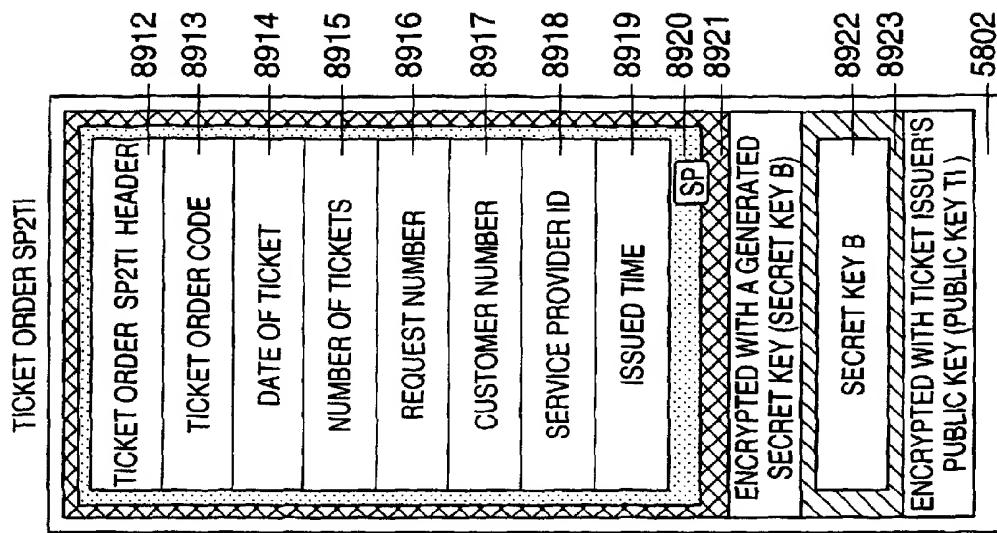


FIG. 90A

FIG. 90B

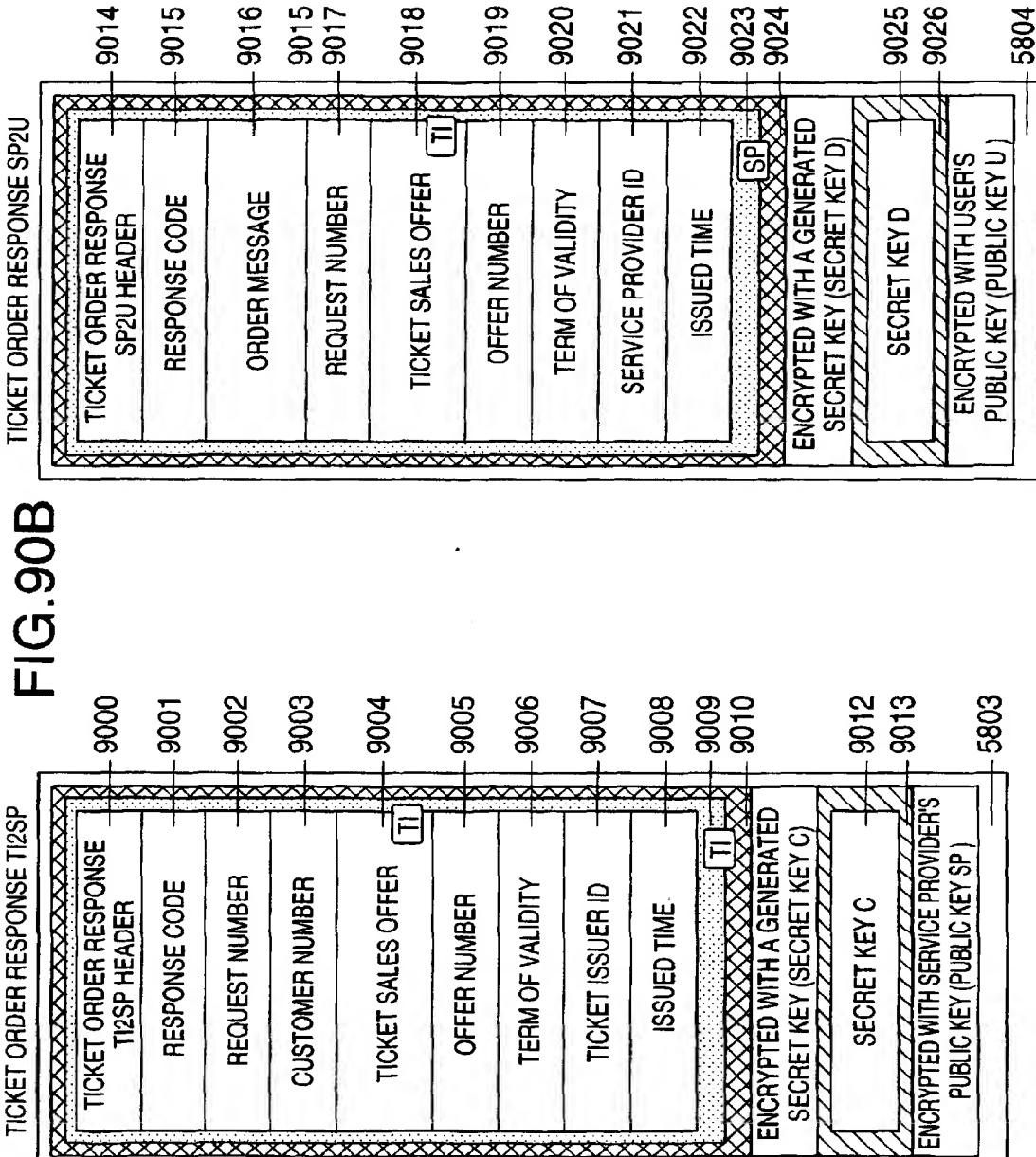


FIG.91A

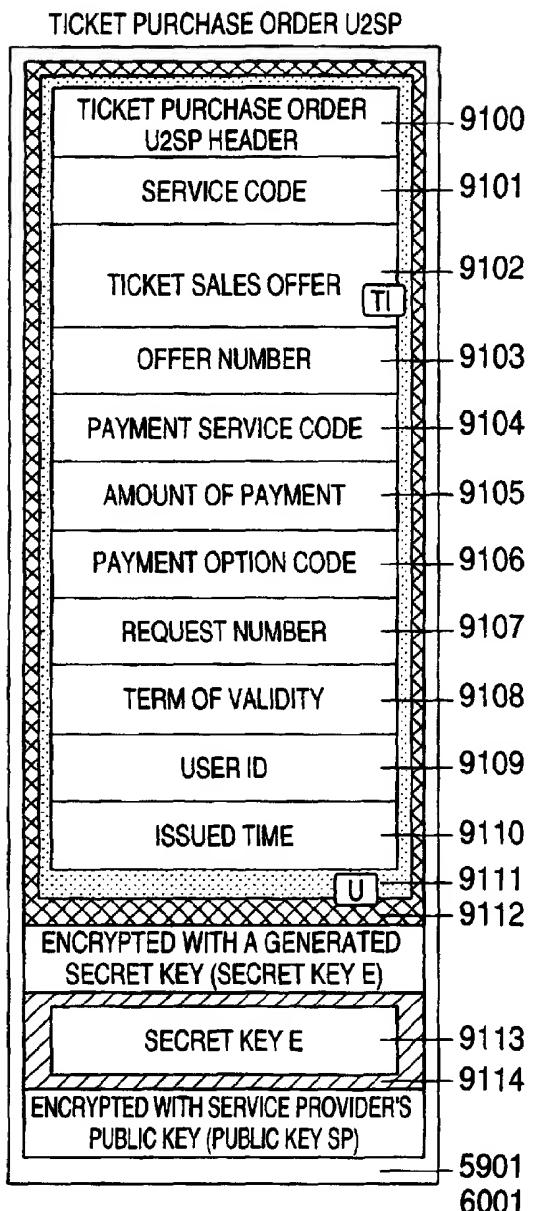


FIG.91B

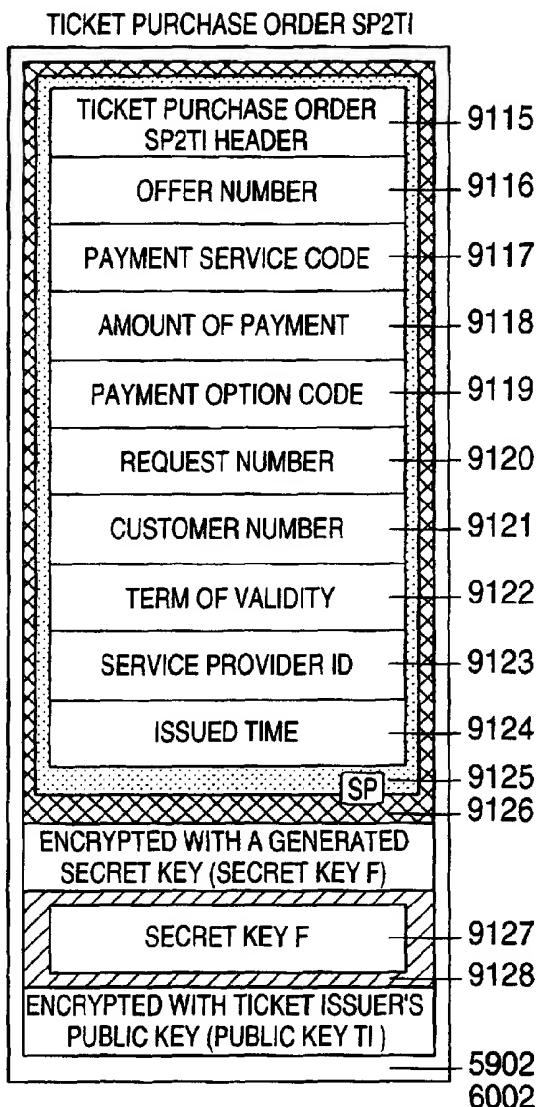


FIG.92A

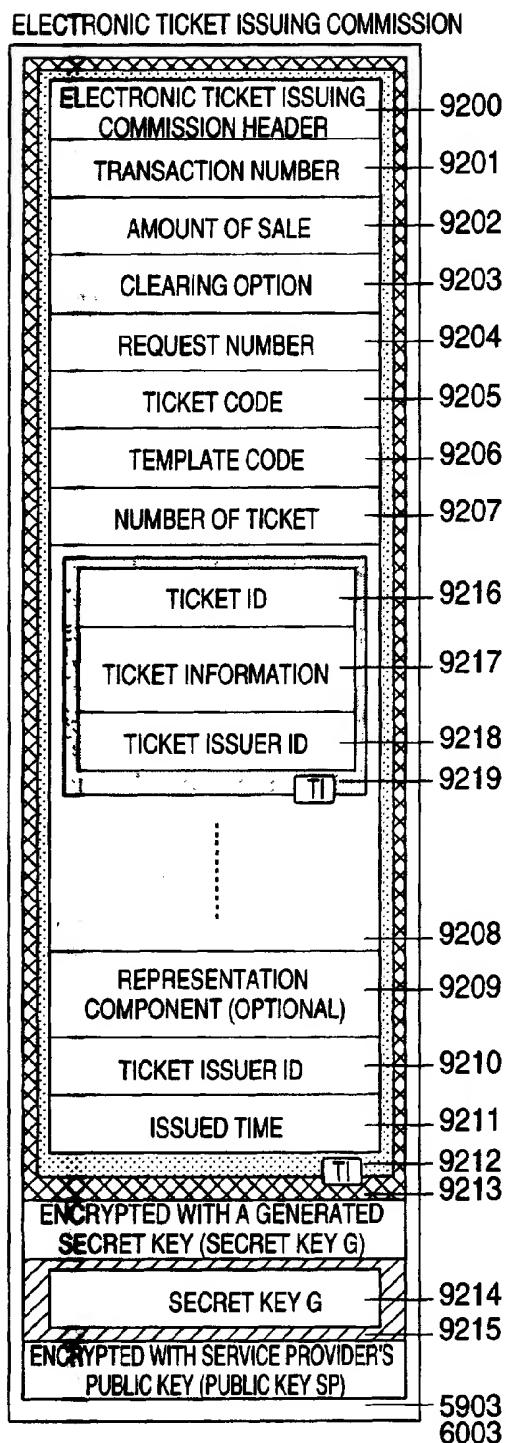


FIG.92B

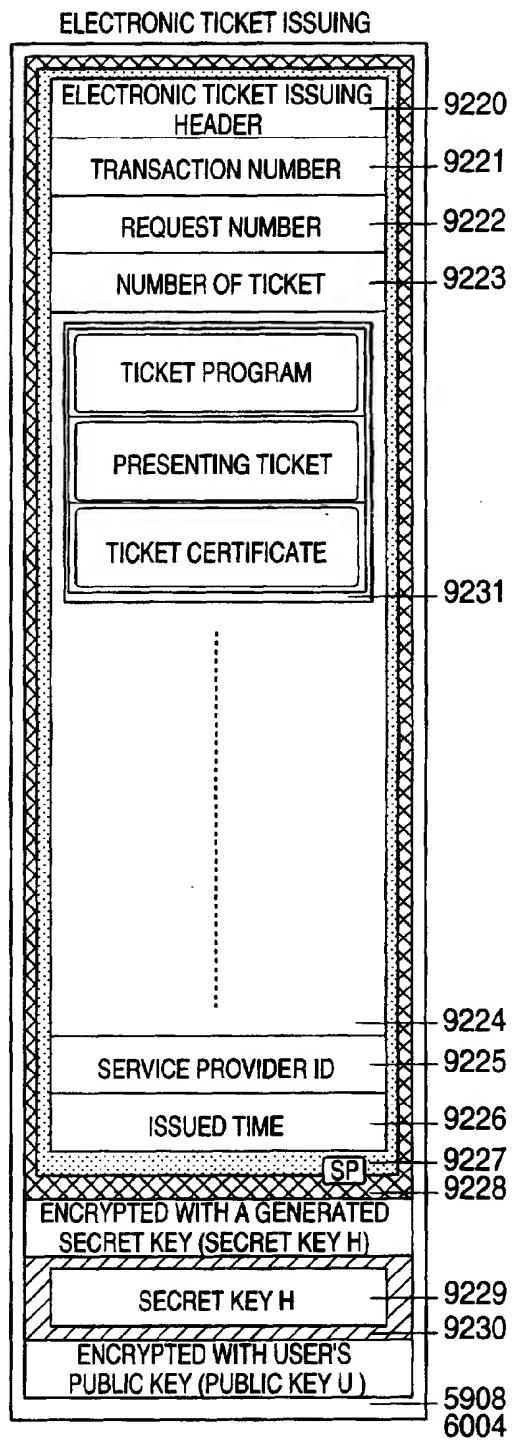


FIG.93A

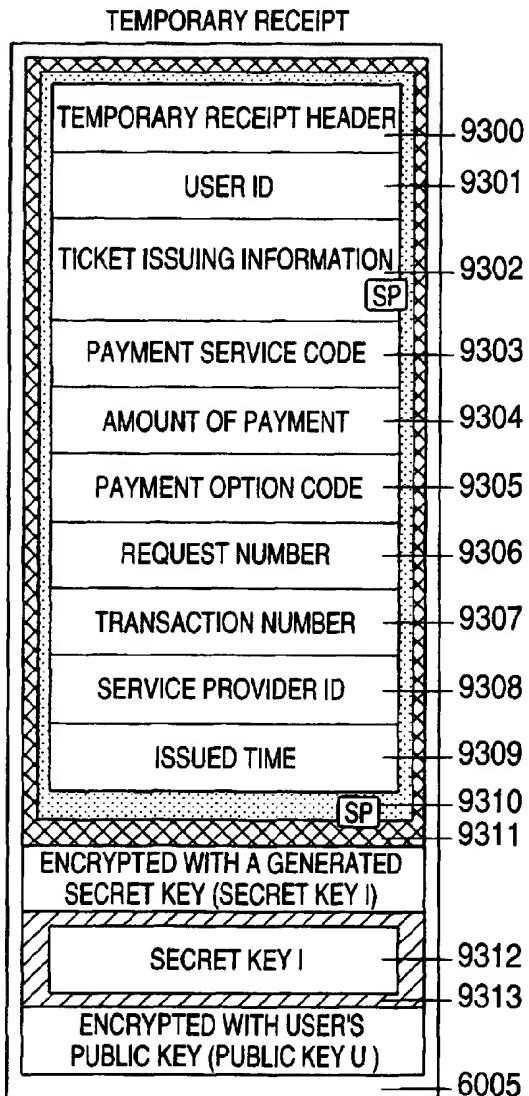


FIG.93B

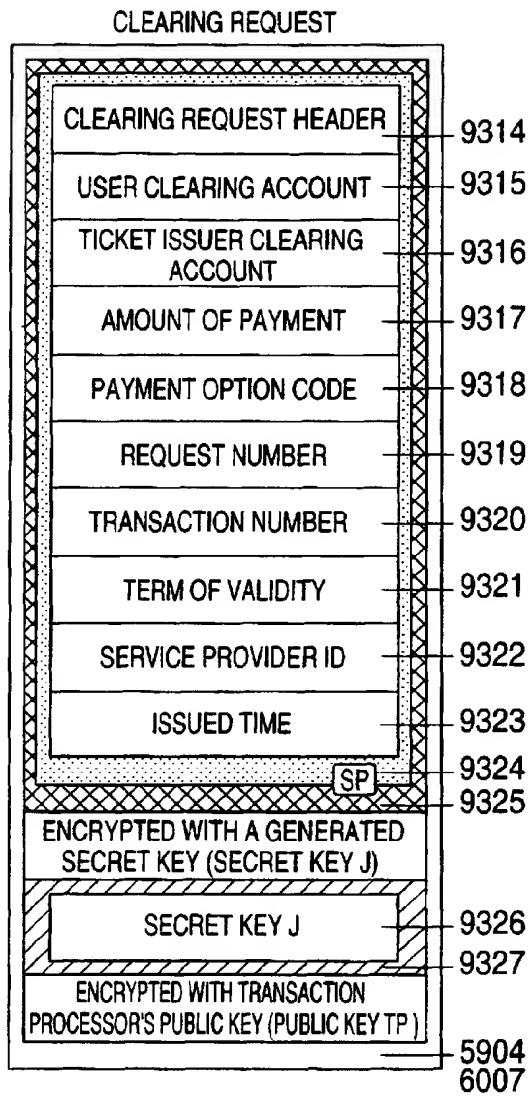


FIG. 94A

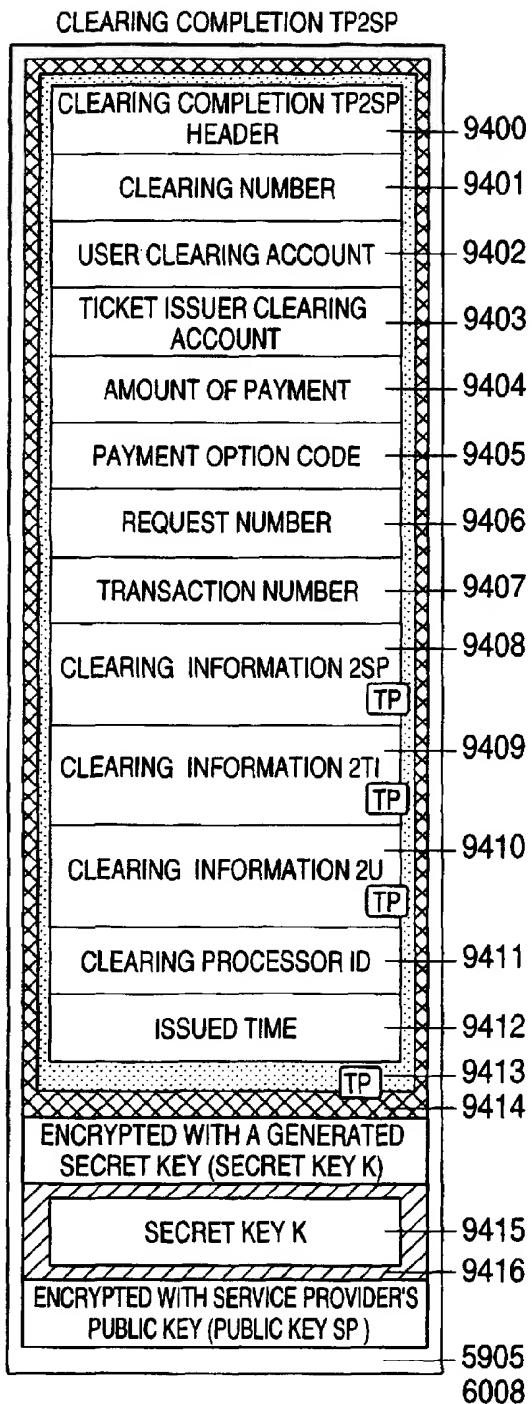


FIG. 94B

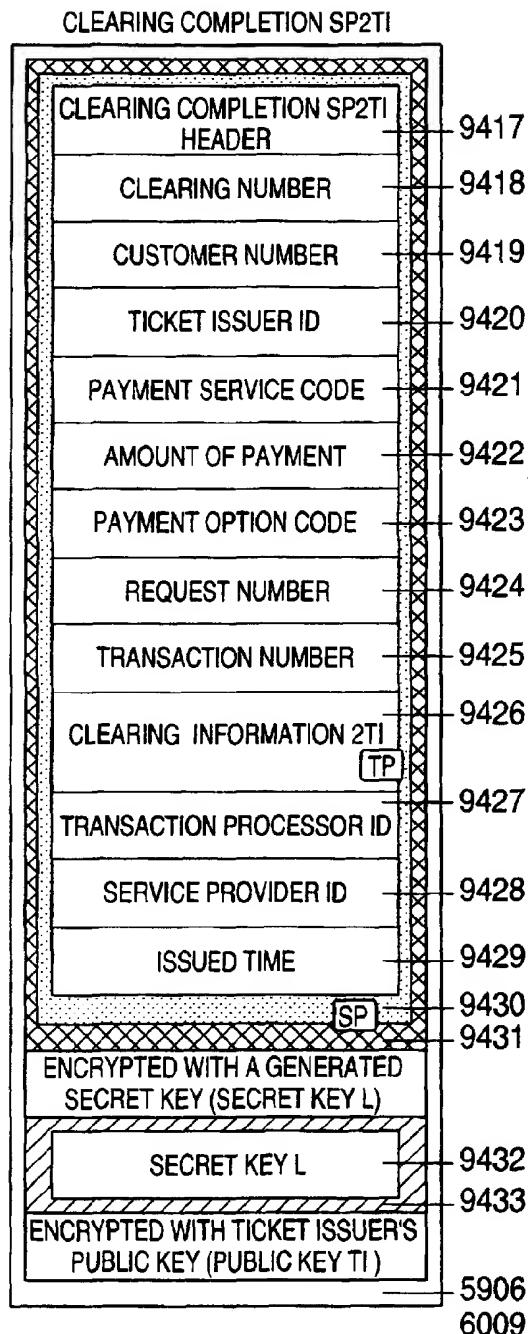


FIG.95A

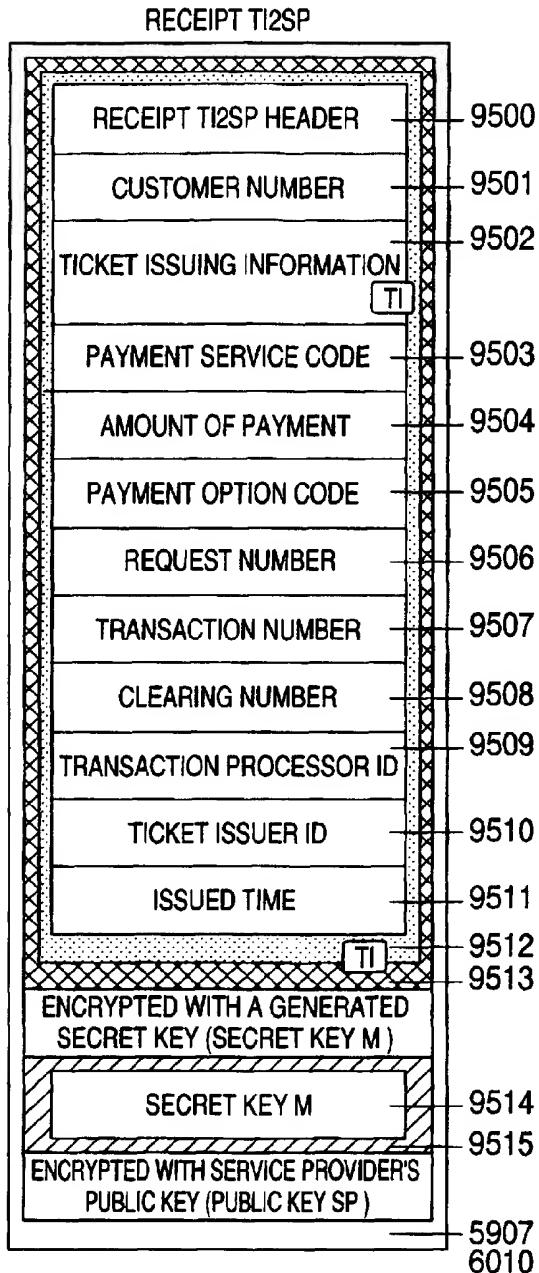


FIG.95B

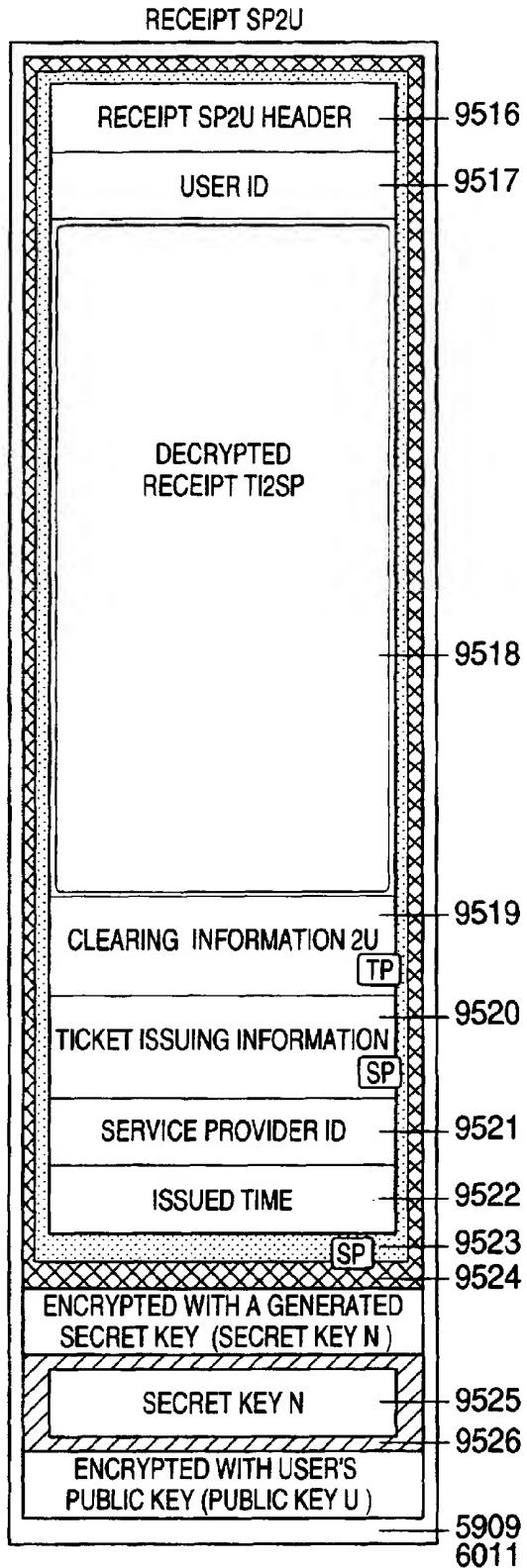


FIG.96A

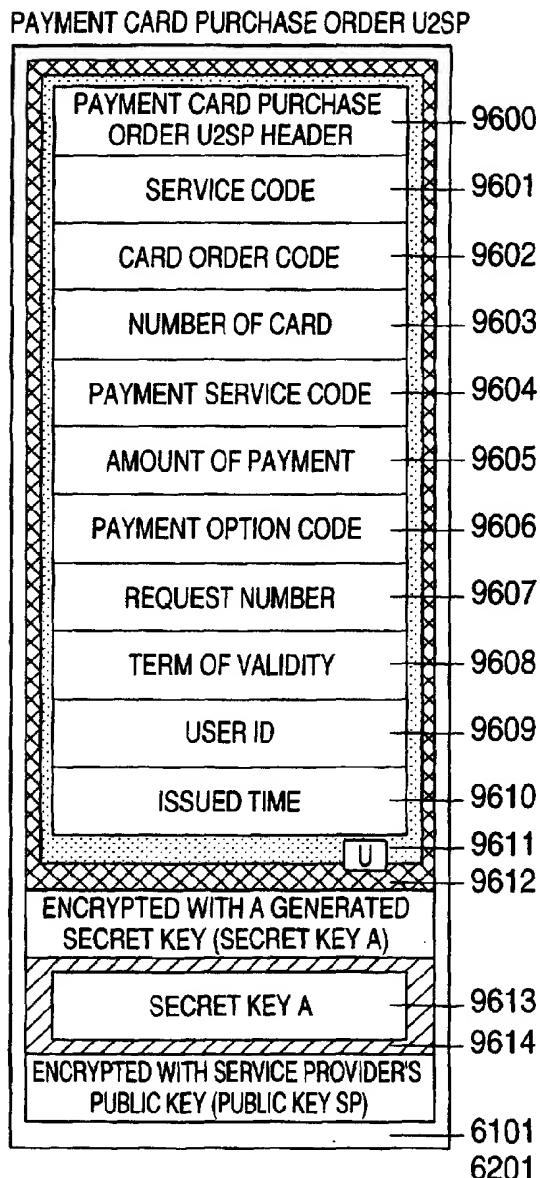


FIG.96B

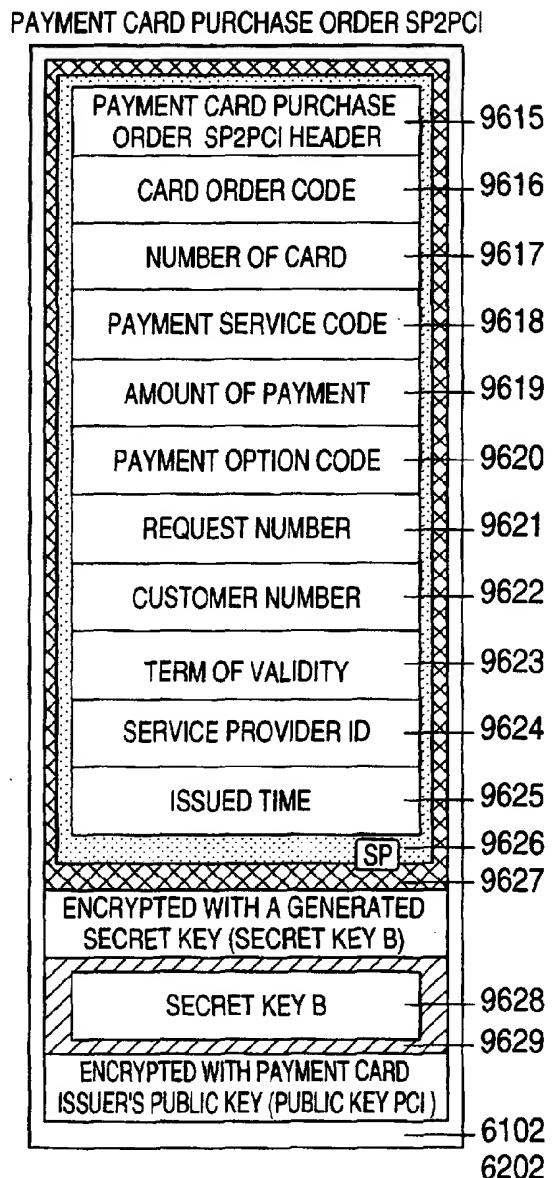


FIG.97A

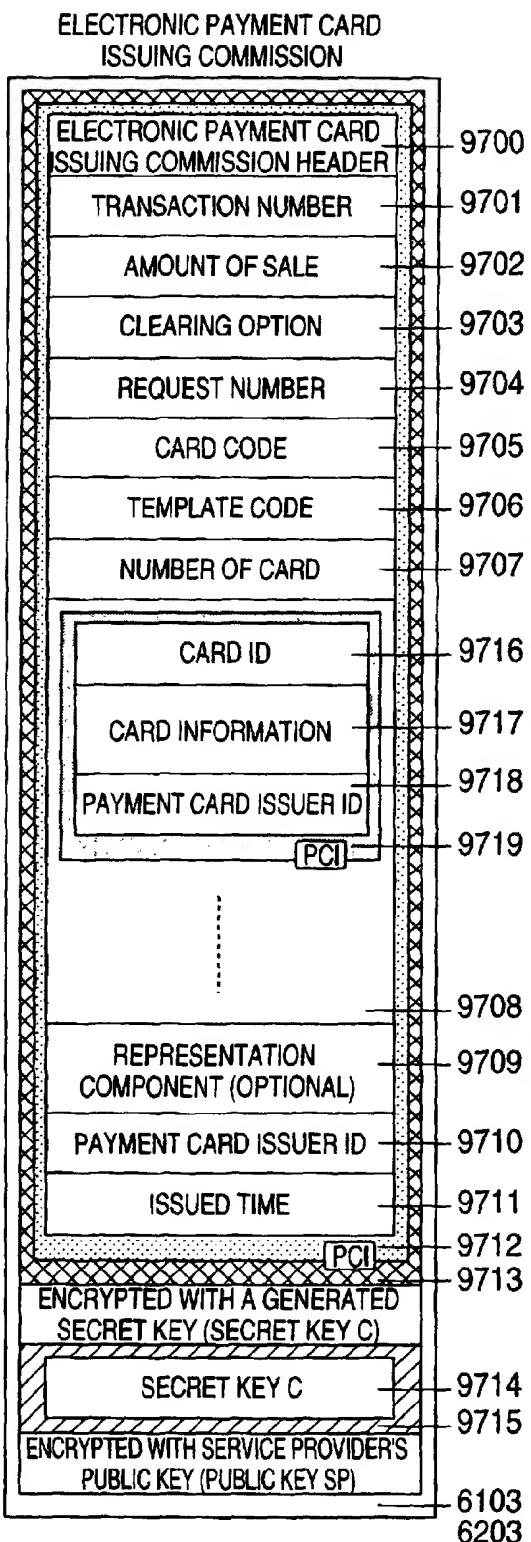


FIG.97B

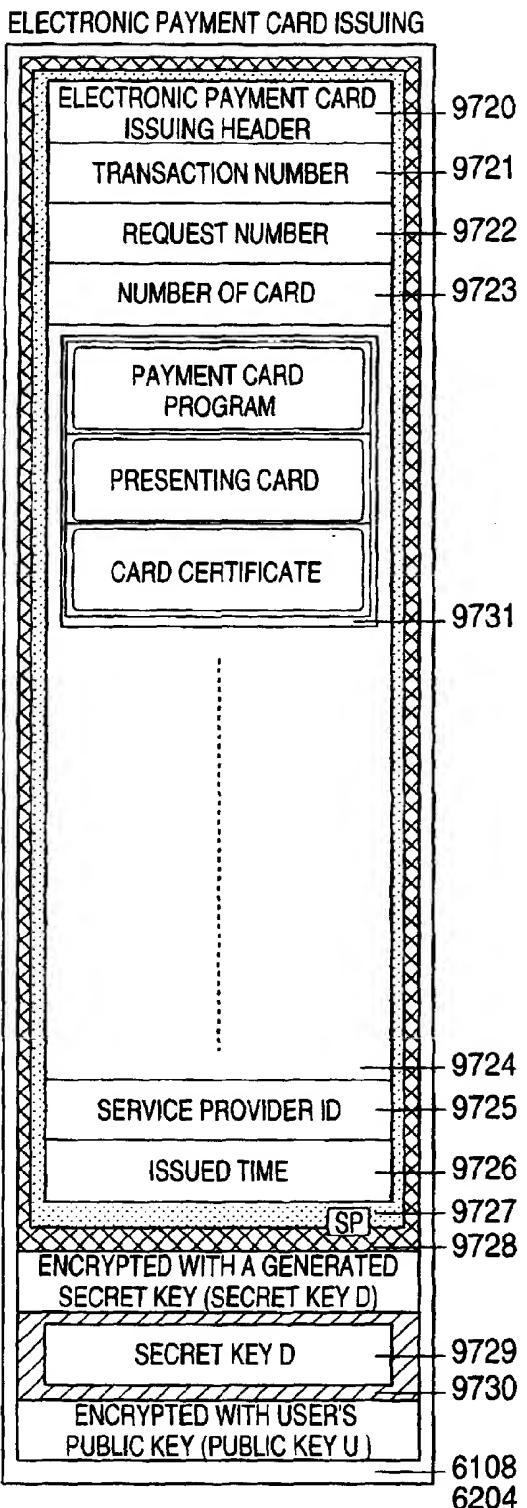


FIG.98A

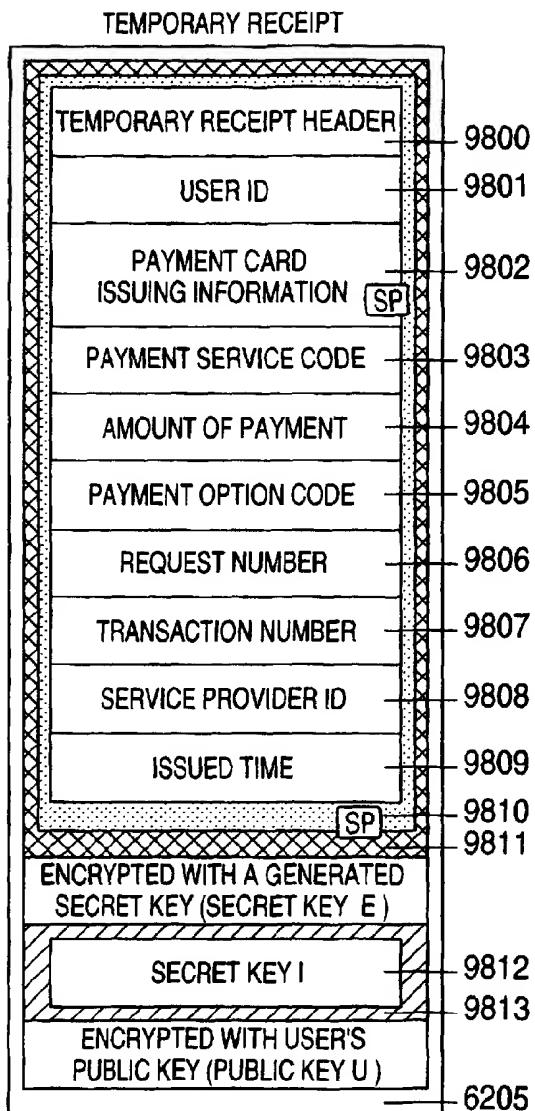


FIG.98B

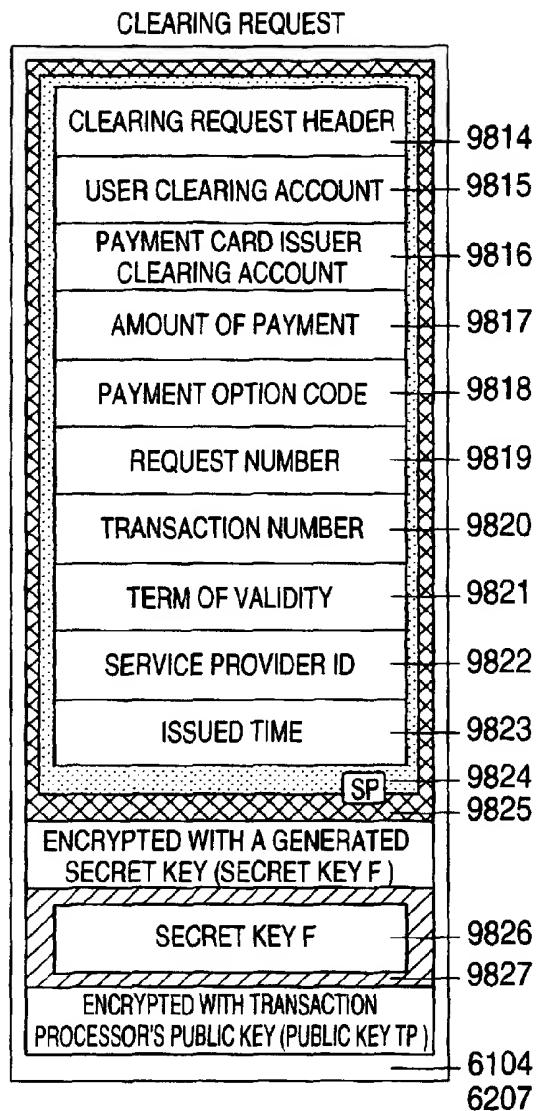


FIG.99A

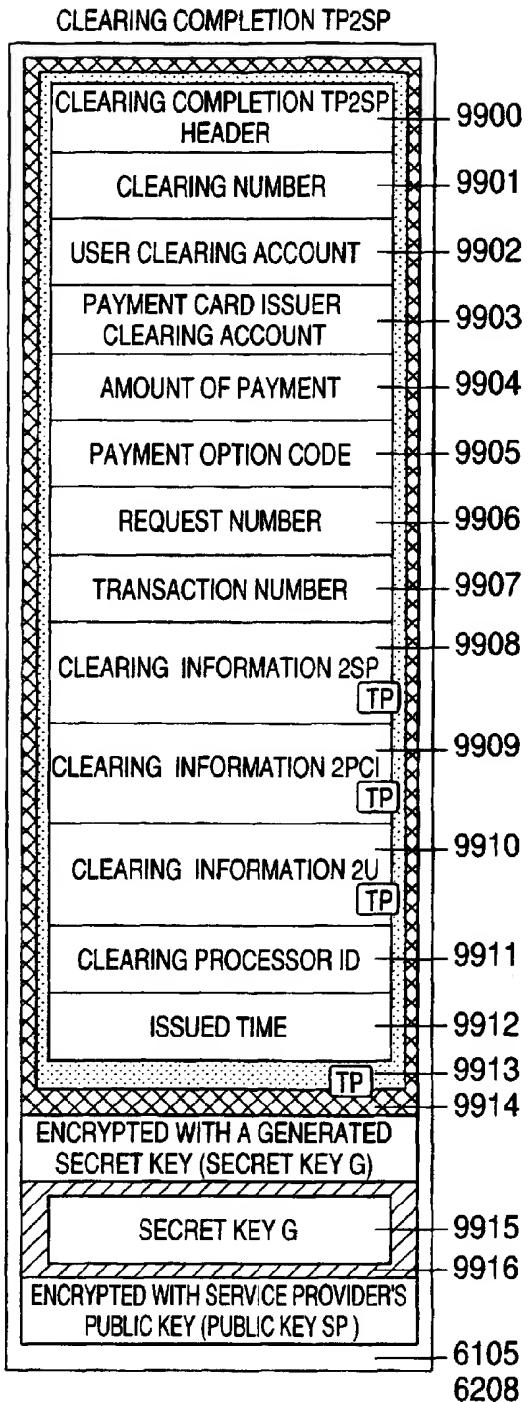


FIG.99B

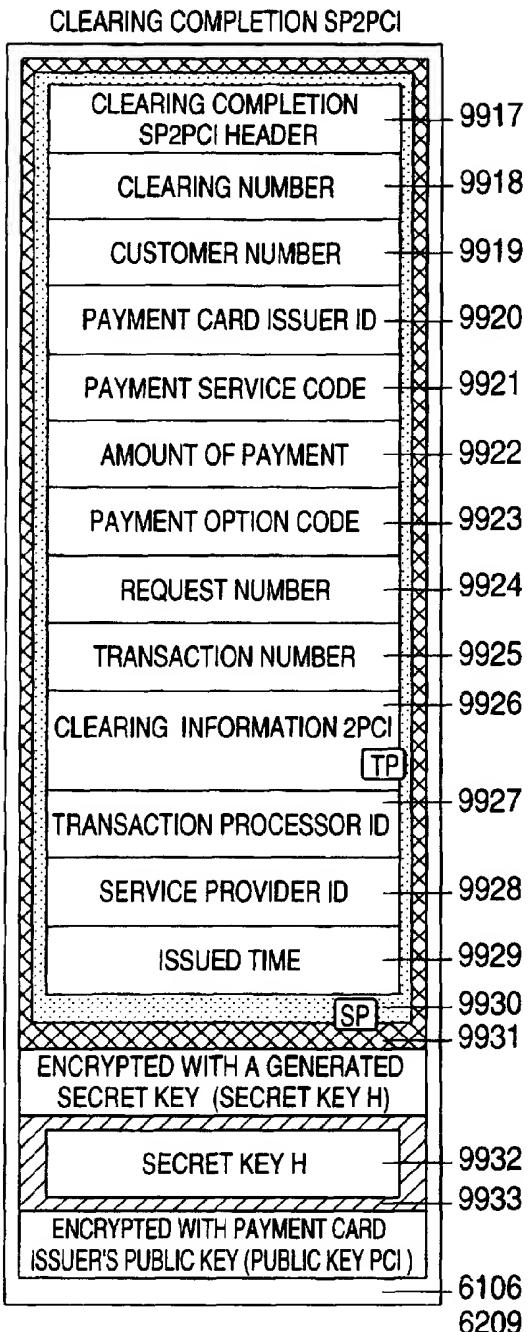


FIG.100A

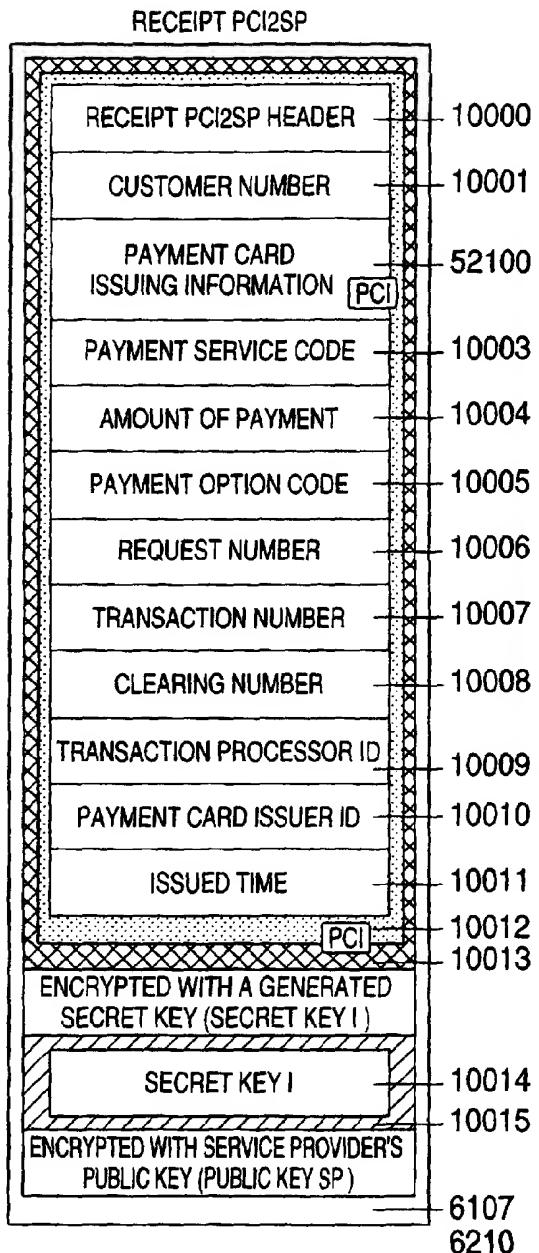


FIG.100B

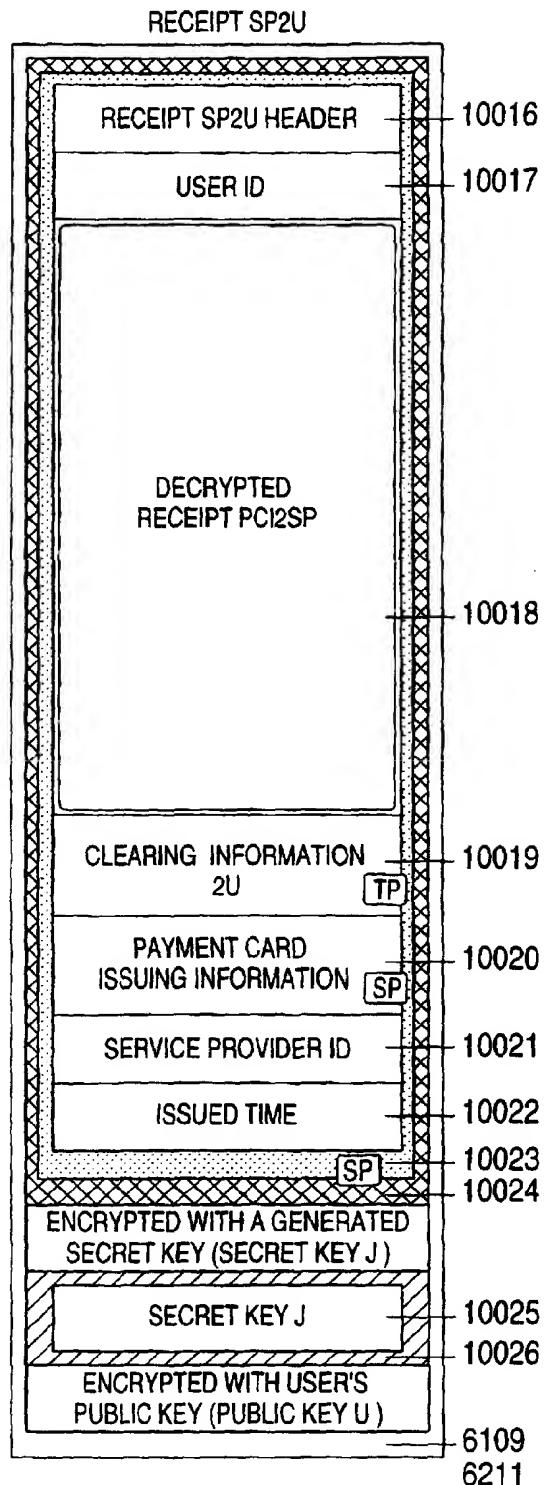
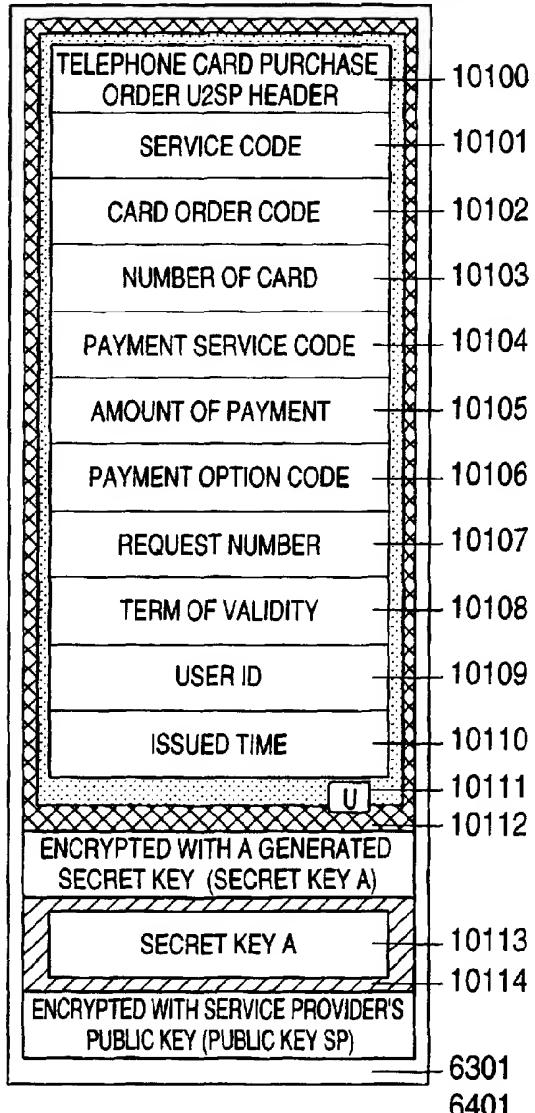


FIG.101A

TELEPHONE CARD PURCHASE ORDER U2SP



TELEPHONE CARD PURCHASE ORDER SP2TCI

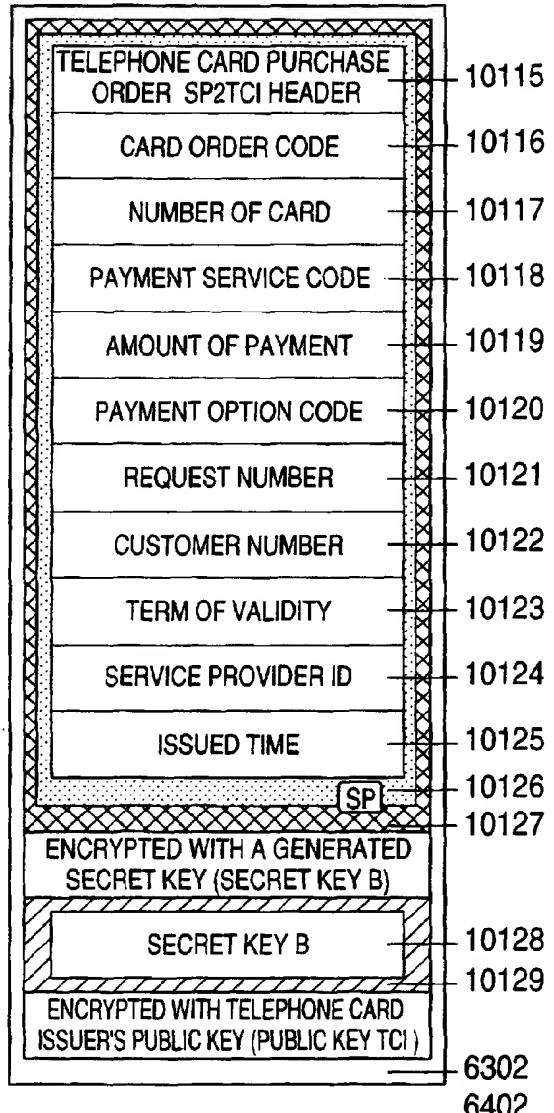


FIG.101B

FIG.102A

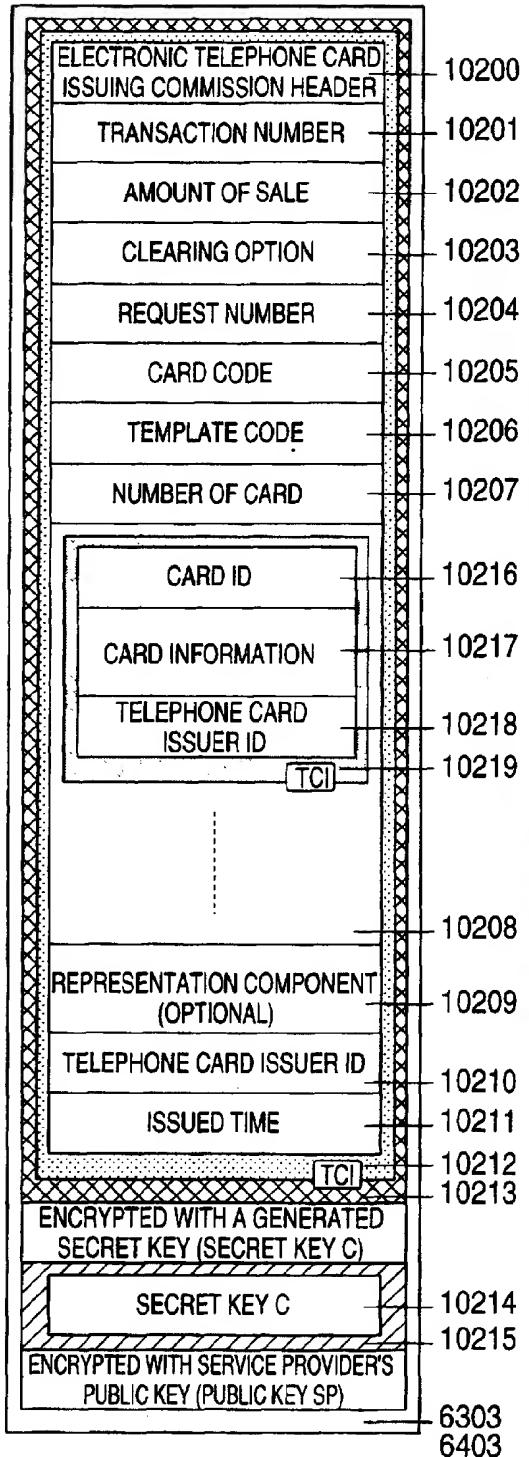
ELECTRONIC TELEPHONE CARD  
ISSUING COMMISSION

FIG.102B

ELECTRONIC TELEPHONE CARD ISSUING

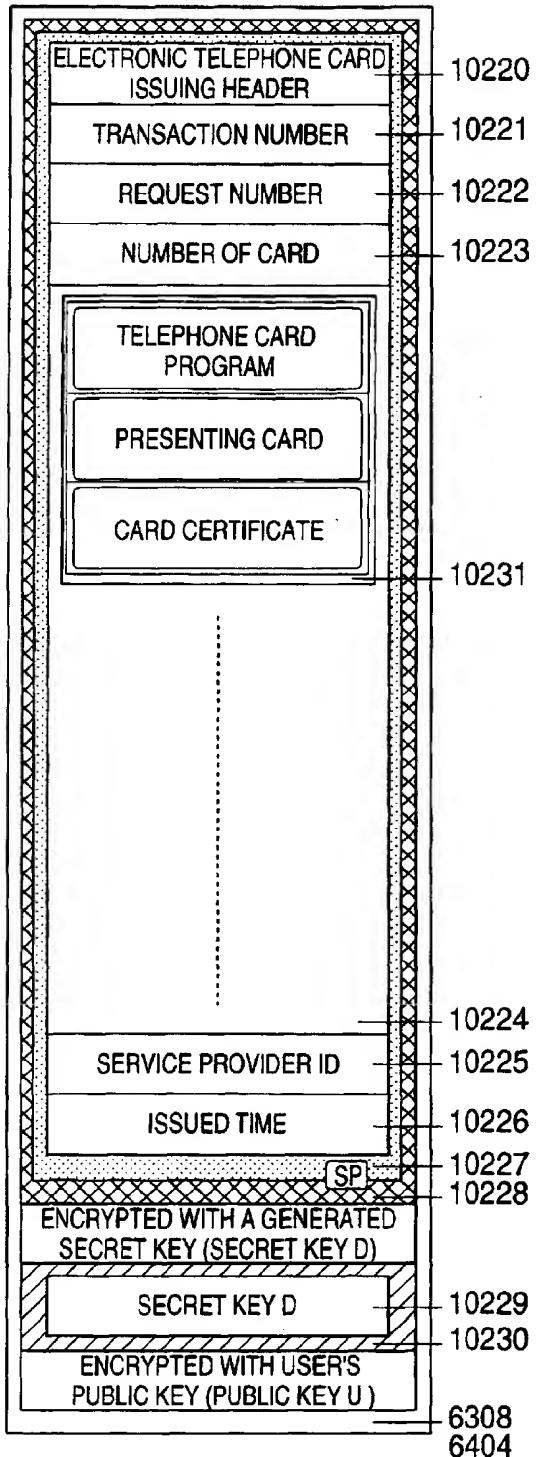


FIG.103A

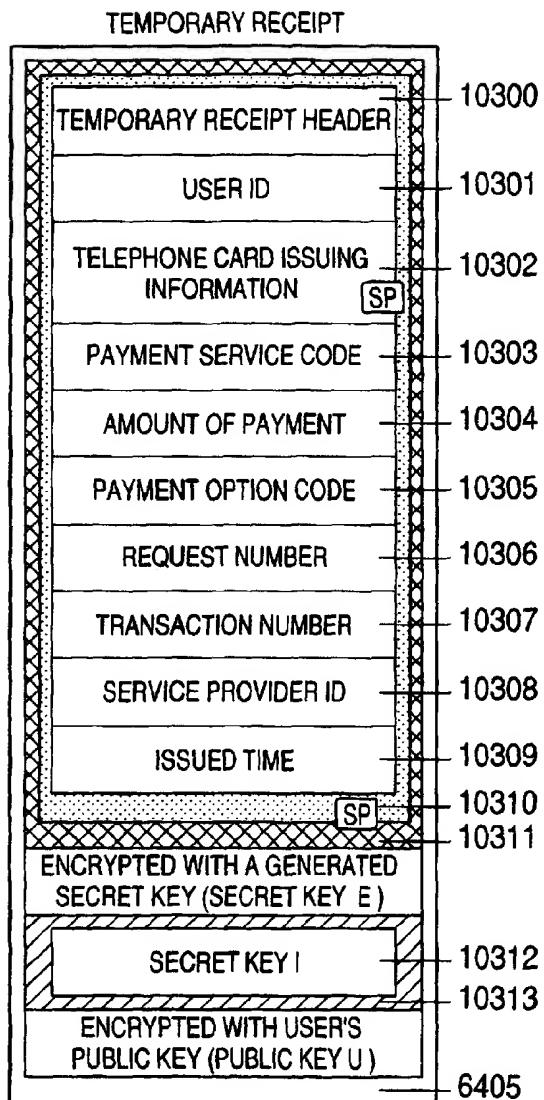


FIG.103B

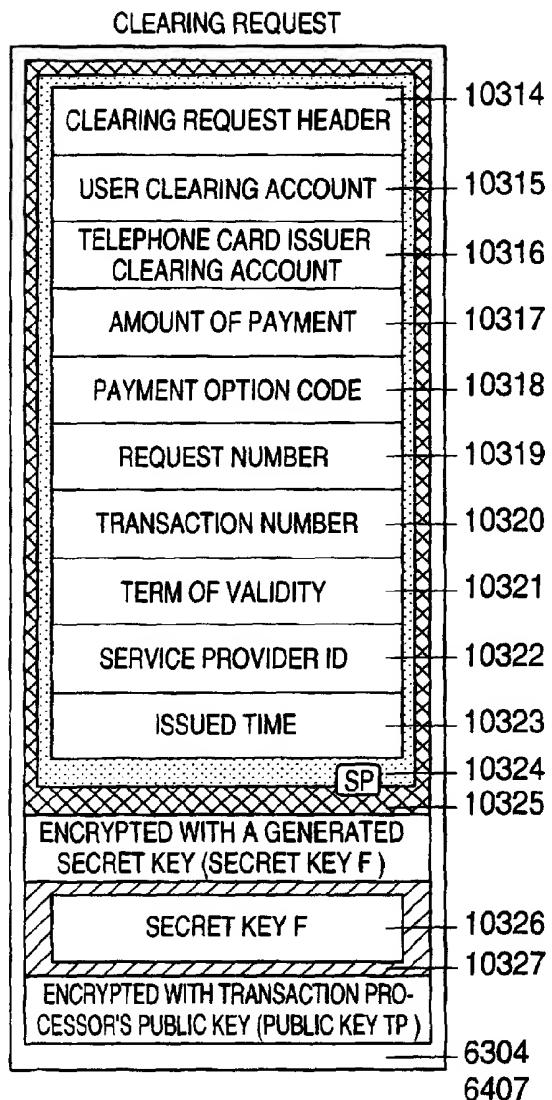


FIG.104A

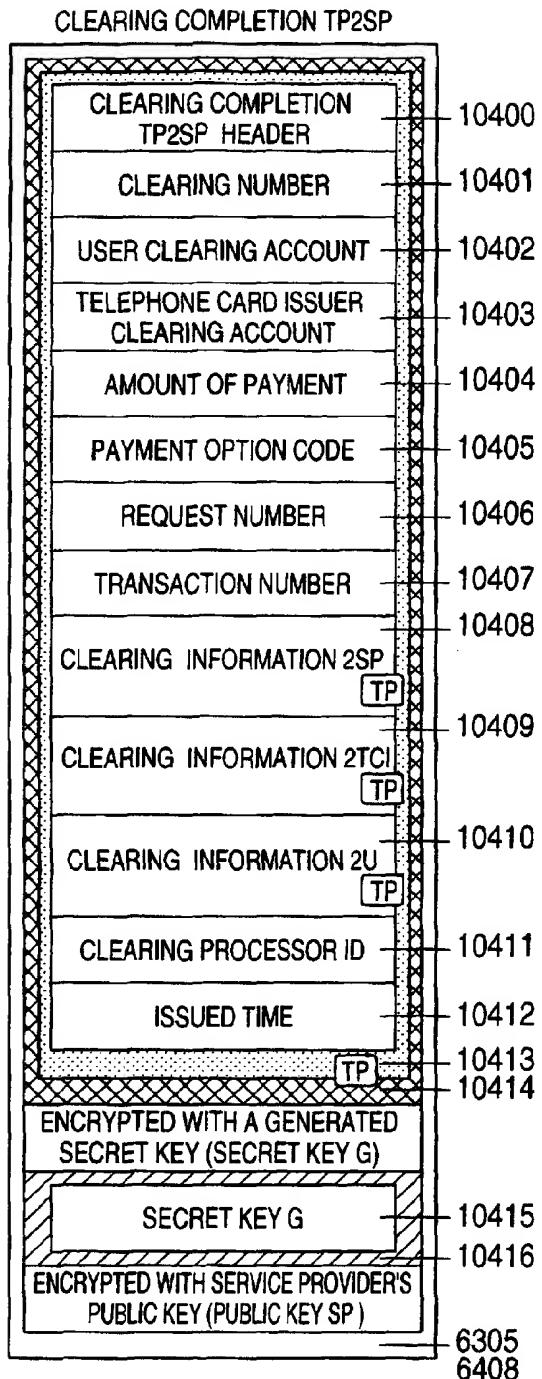


FIG.104B

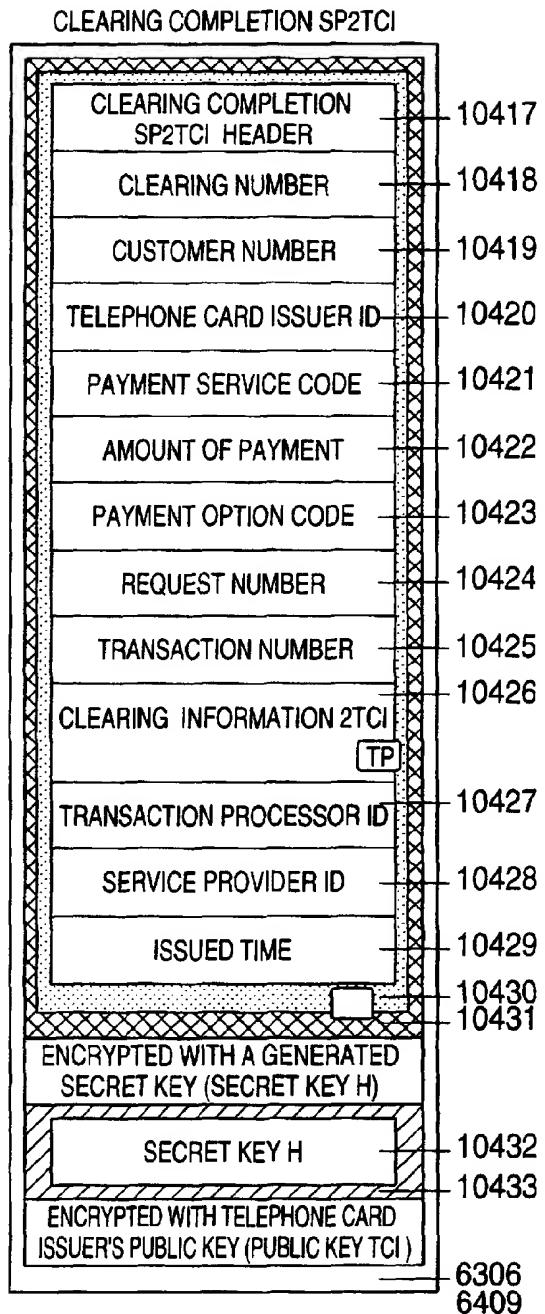


FIG.105A

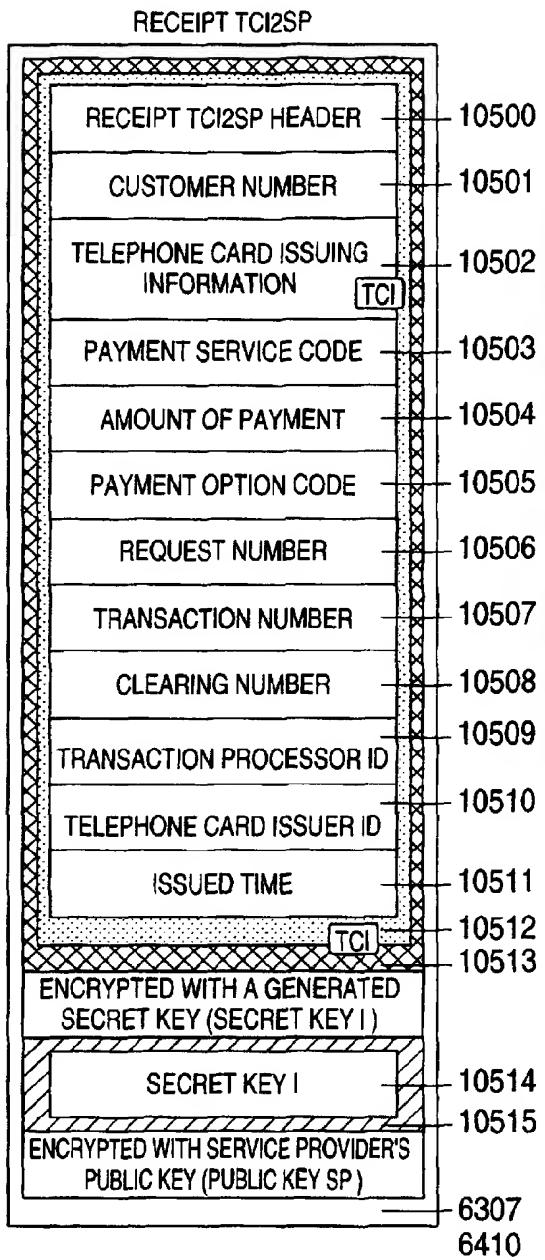


FIG.105B

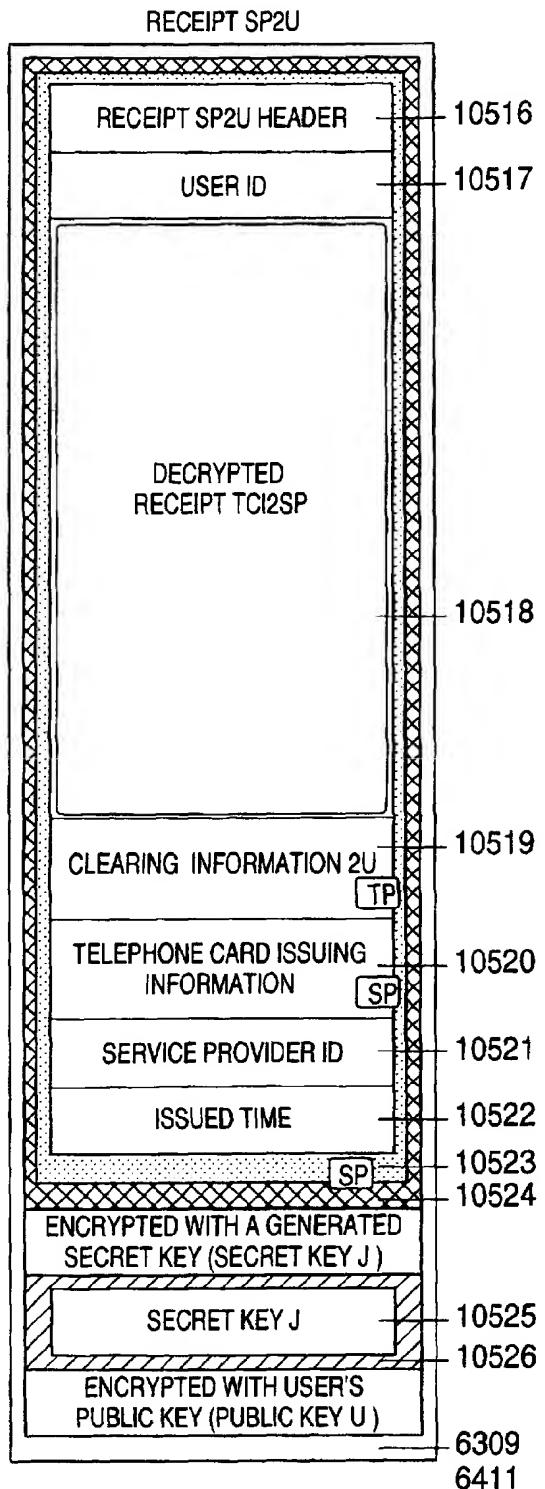


FIG. 106A

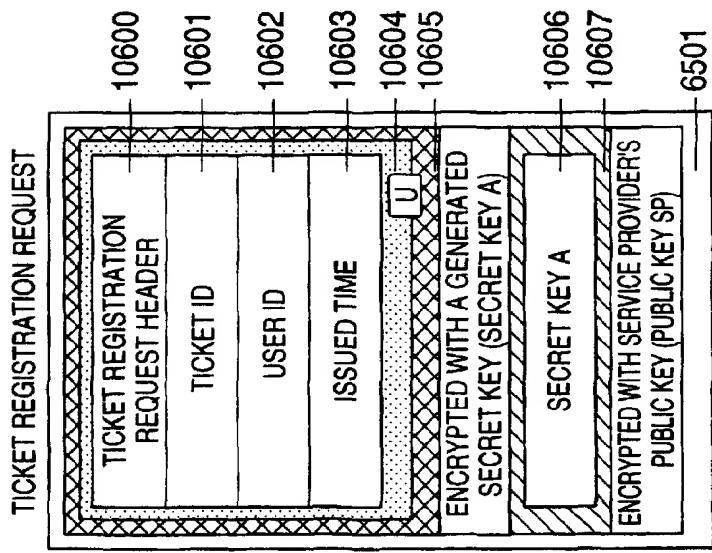


FIG. 106B

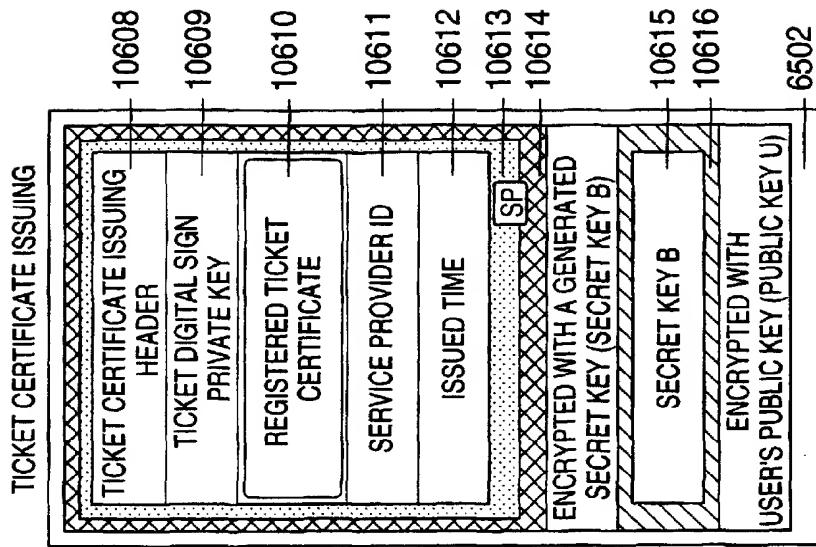


FIG. 107A

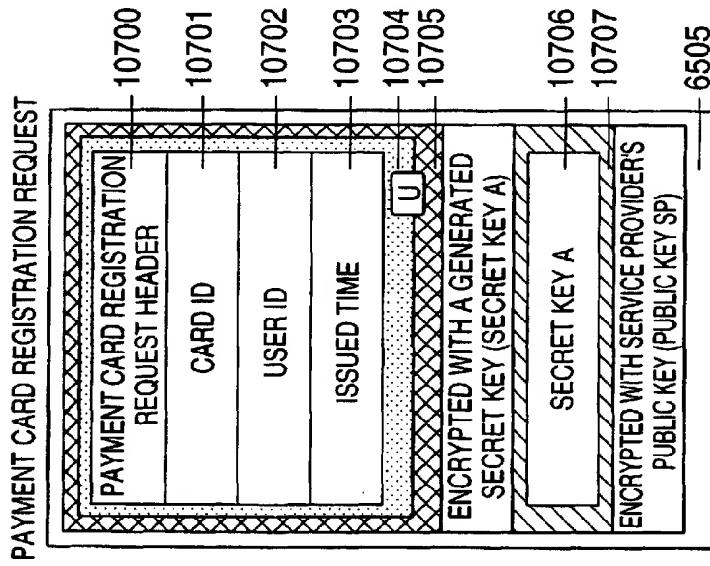


FIG. 107B

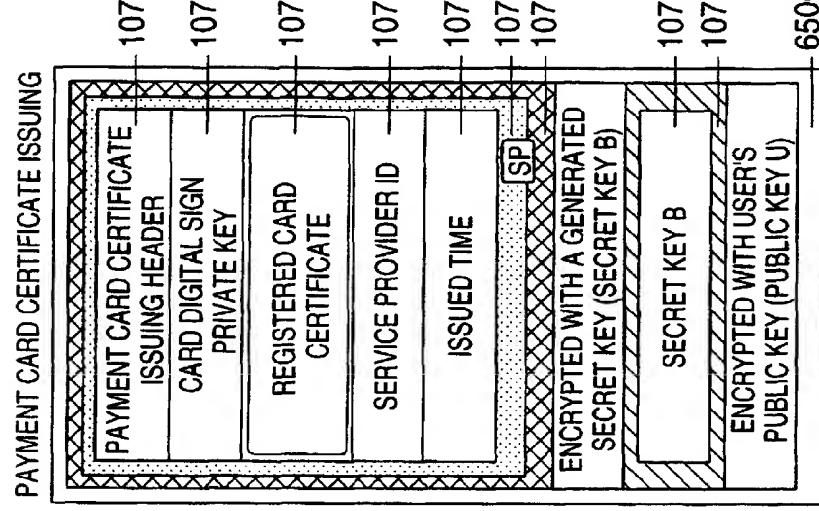


FIG. 108A

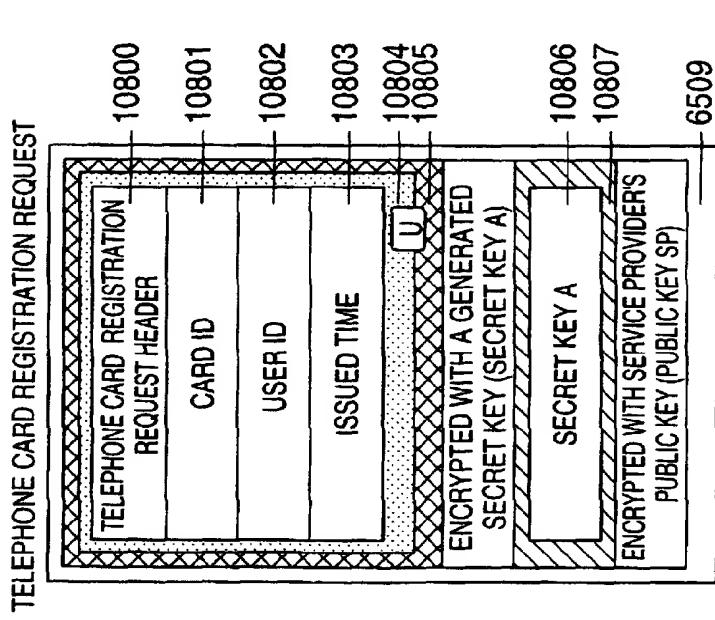


FIG. 108B

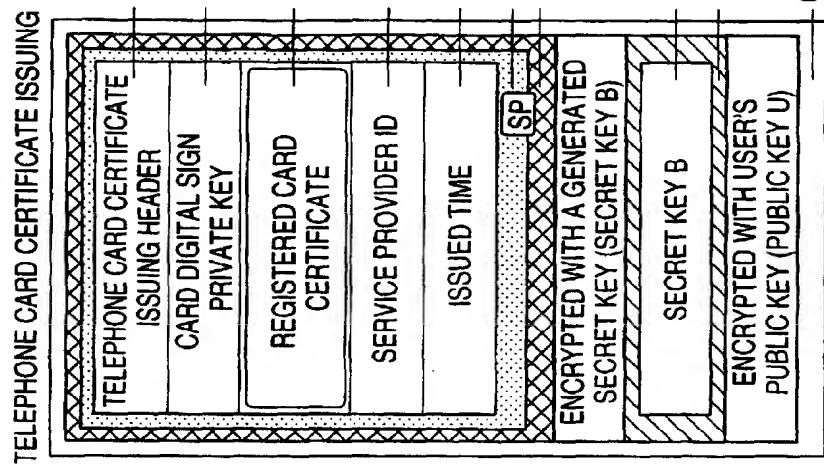


FIG.109A

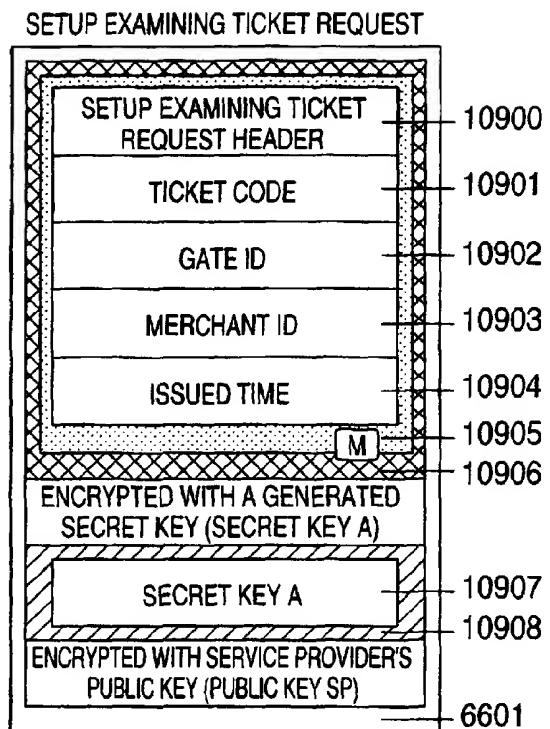


FIG.109B

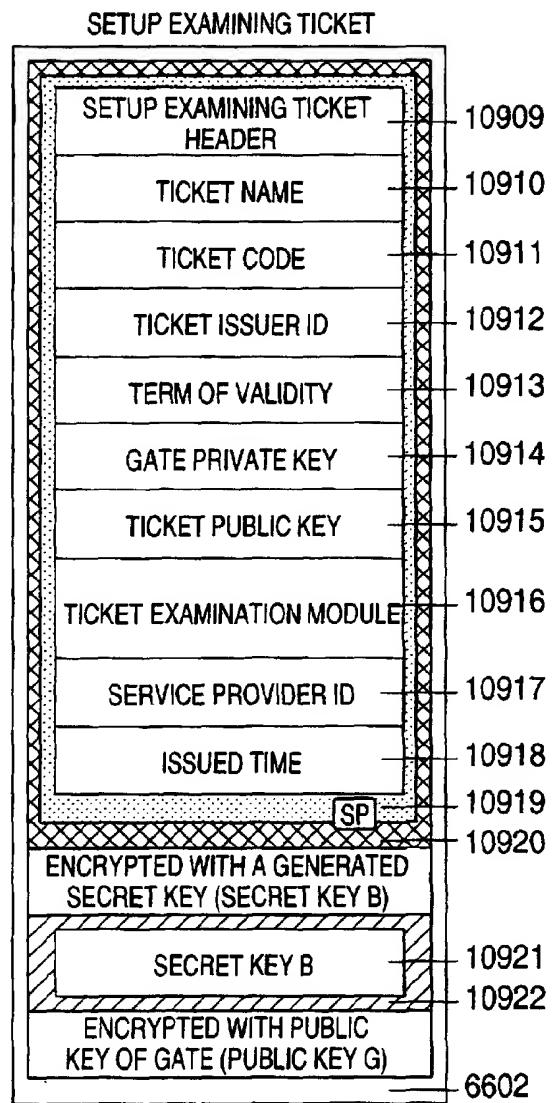


FIG.110A

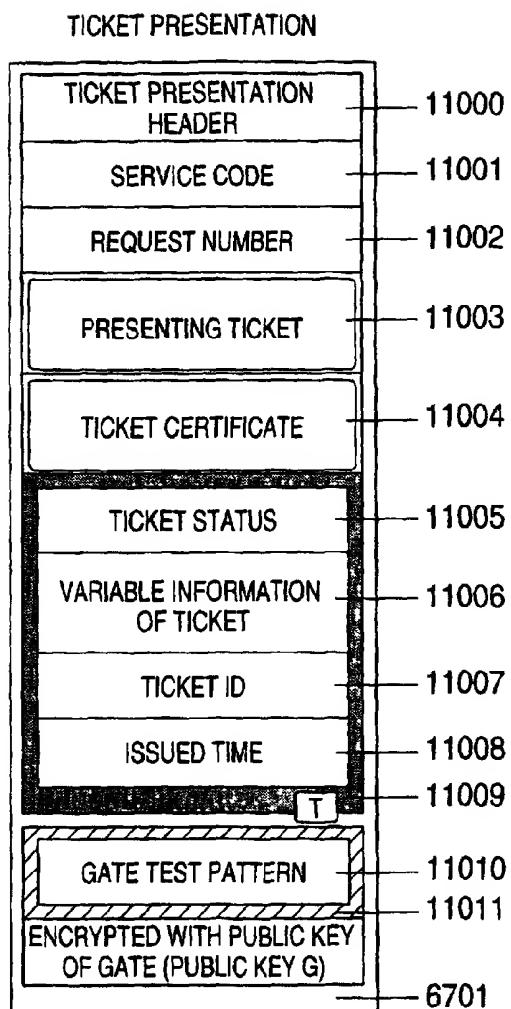
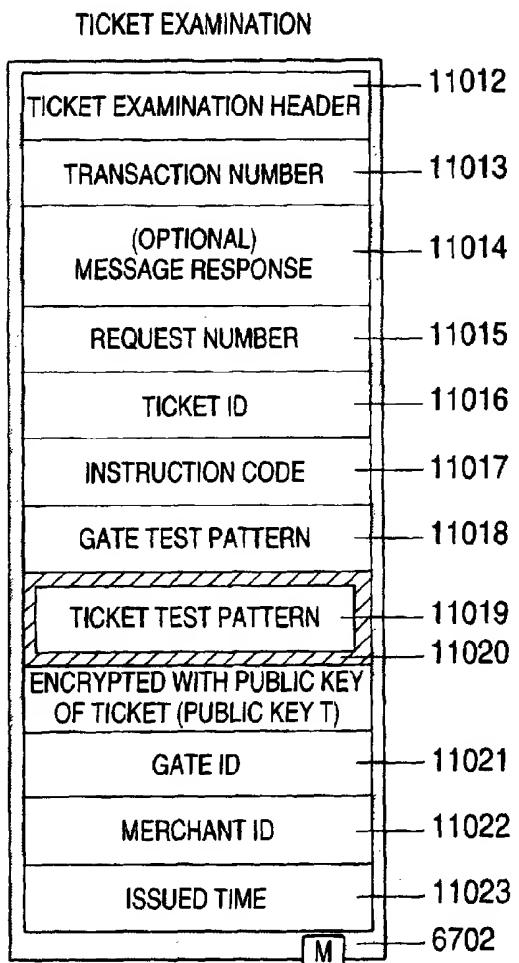


FIG.110B



**FIG. 111A**

TICKET EXAMINATION RESPONSE	
TICKET EXAMINATION RESPONSE HEADER	11100
TICKET EXAMINATION NUMBER	11101
TICKET TEST PATTERN	11102
TICKET STATUS	11103
VARIABLE INFORMATION OF TICKET	11104
GATE ID	11105
MERCHANT ID	11106
REQUEST NUMBER	11107
TRANSACTION NUMBER	11108
TICKET CODE	11109
TICKET ID	11110
ISSUED TIME	11111
	11112
	6703

**FIG. 111B**

EXAMINATION CERTIFICATE	
EXAMINATION CERTIFICATE HEADER	11113
INFORMATION OF EXAMINATION	11114
TICKET ID	11115
REQUEST NUMBER	11116
TRANSACTION NUMBER	11117
TICKET EXAMINATION NUMBER	11118
GATE ID	11119
MERCHANT ID	11120
ISSUED TIME	11121
	6704

FIG.112A PAYMENT OFFER

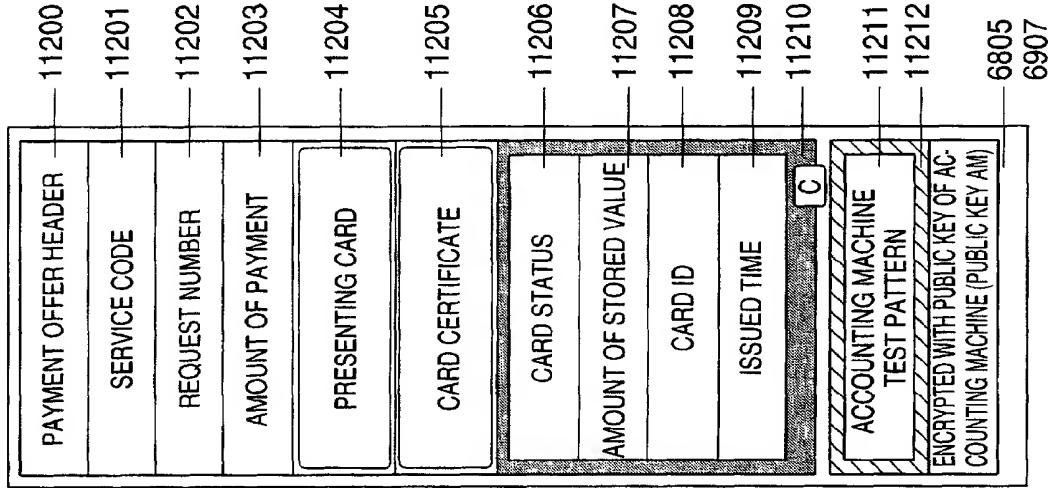


FIG.112B PAYMENT OFFER RESPONSE

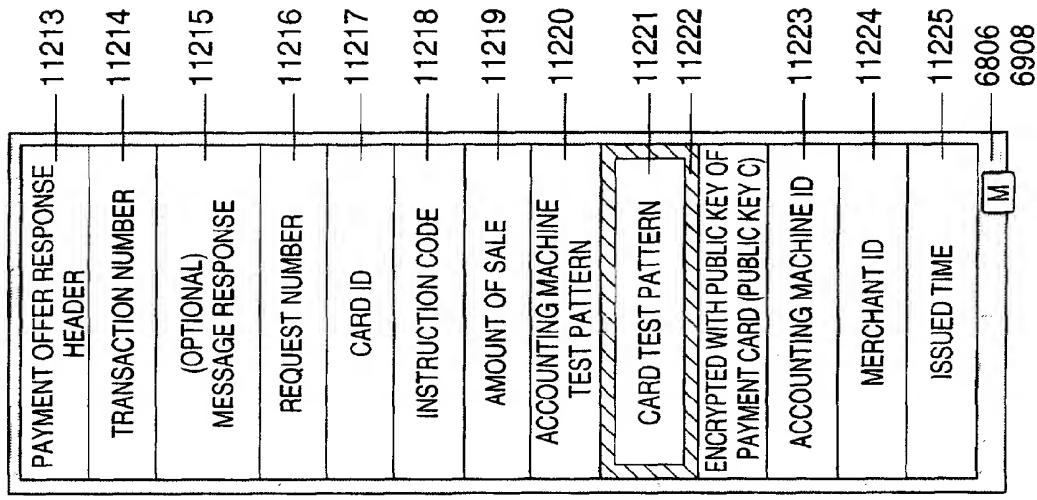


FIG.113A

## MICRO CHECK

MICRO CHECK HEADER	11300
MICRO CHECK ISSUED NUMBER	11301
CARD TEST PATTERN	11302
AMOUNT OF PAYMENT	11303
CARD STATUS	11304
STORED VALUE	11305
ACCOUNTING MACHINE ID	11306
MERCHANT ID	11307
REQUEST NUMBER	11308
TRANSACTION NUMBER	11309
CARD CODE	11310
CARD ID	11311
ISSUED TIME	11312
	11313
	6807
	6909

FIG.113B

## RECEIPT

RECEIPT HEADER	11314
SALES INFORMATION	11315
CARD ID	11316
AMOUNT OF RECEIPT	11317
REQUEST NUMBER	11318
TRANSACTION NUMBER	11319
MICRO CHECK ISSUED NUMBER	11320
ACCOUNTING MACHINE ID	11321
MERCHANT ID	11322
ISSUED TIME	11323
M	6808
	6910

FIG. 114A MICRO CHECK CALL REQUEST

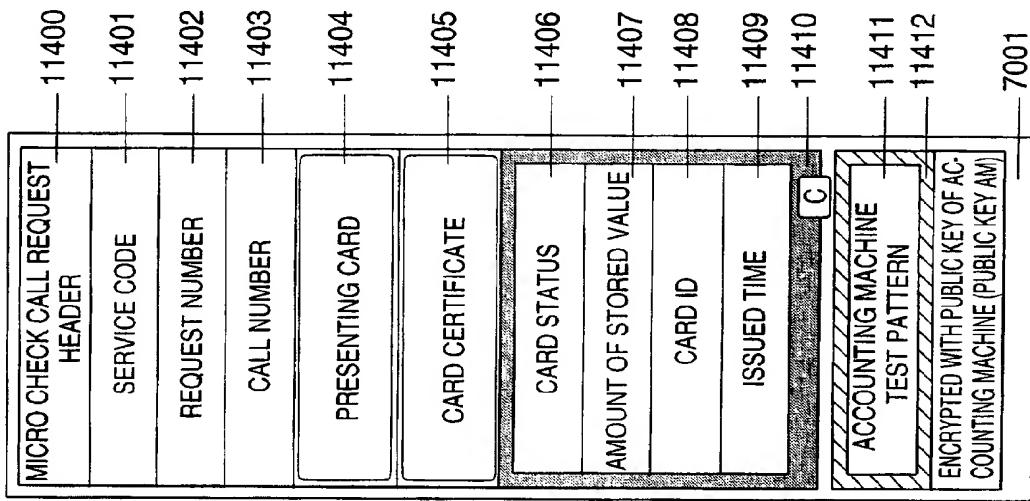


FIG. 114B MICRO CHECK CALL RESPONSE

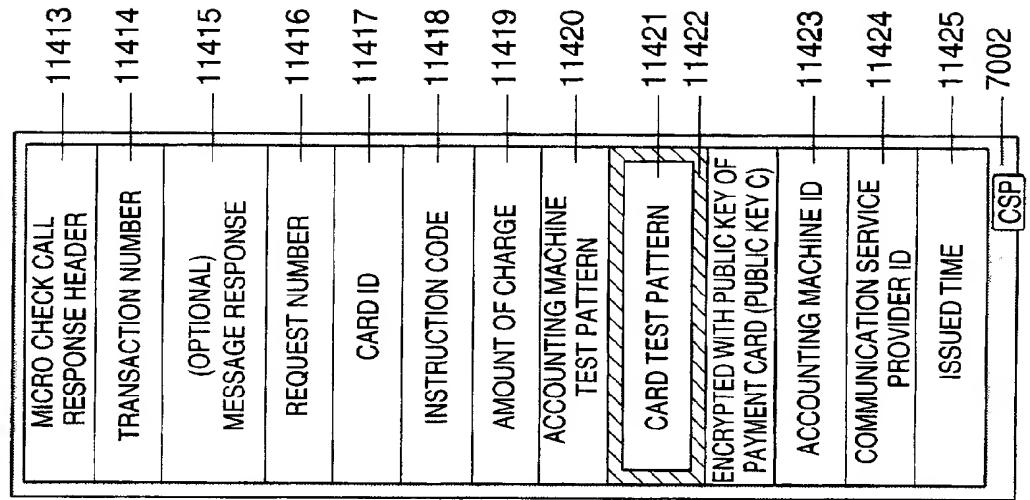


FIG.115A TELEPHONE MICRO CHECK

TELEPHONE MICRO CHECK HEADER	11500
MICRO CHECK ISSUED NUMBER	11501
CARD TEST PATTERN	11502
AMOUNT OF PAYMENT	11503
CARD STATUS	11504
STORED VALUE	11505
ACCOUNTING MACHINE ID	11506
COMMUNICATION SERVICE PROVIDER ID	11507
REQUEST NUMBER	11508
TRANSACTION NUMBER	11509
CARD CODE	11510
CARD ID	11511
ISSUED TIME	11512

C  
UC  
UC  
UC  
UC  
UC  
UC  
U

FIG.115B Receipt

RECEIPT HEADER	11514
PROVIDING SERVICE INFORMATION	11515
CARD ID	11516
AMOUNT OF RECEIPT	11517
REQUEST NUMBER	11518
TRANSACTION NUMBER	11519
MICRO CHECK ISSUED NUMBER	11520
ACCOUNTING MACHINE ID	11521
COMMUNICATION SERVICE PROVIDER ID	11522
ISSUED TIME	11523

CSP

7009  
7013  
7017

## FIG.115C

### COMMUNICATION CHARGE

COMMUNICATION CHARGE HEADER	11524
TRANSACTION NUMBER	11525
REQUEST NUMBER	11526
CARD ID	11527
INSTRUCTION CODE	11528
AMOUNT OF CHARGE	11529
ACCOUNTING MACHINE ID	11530
COMMUNICATION SERVICE PROVIDER ID	11531
ISSUED TIME	11532
CSP	7011
	7015

FIG.116A

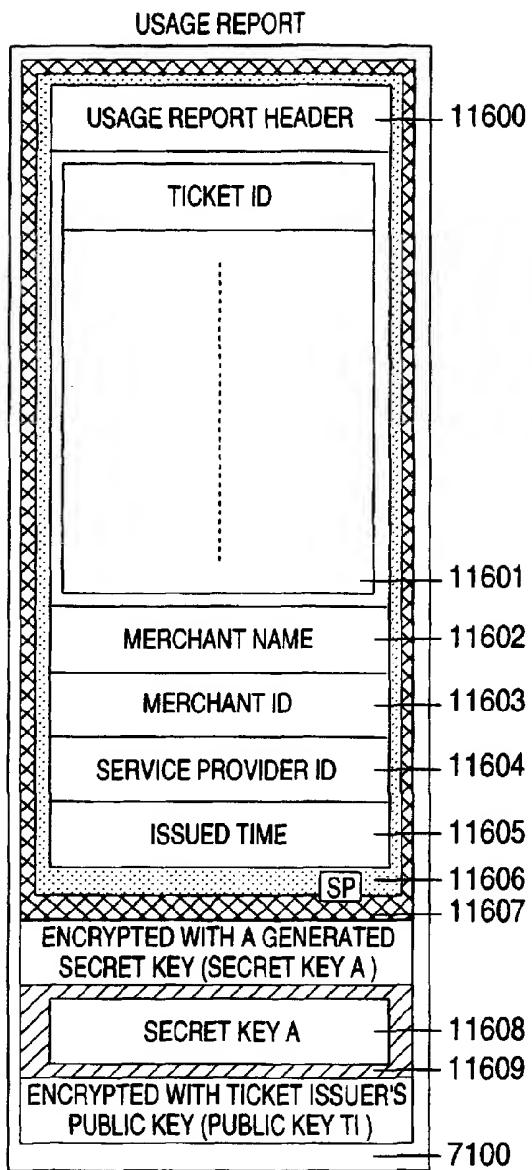


FIG.116B

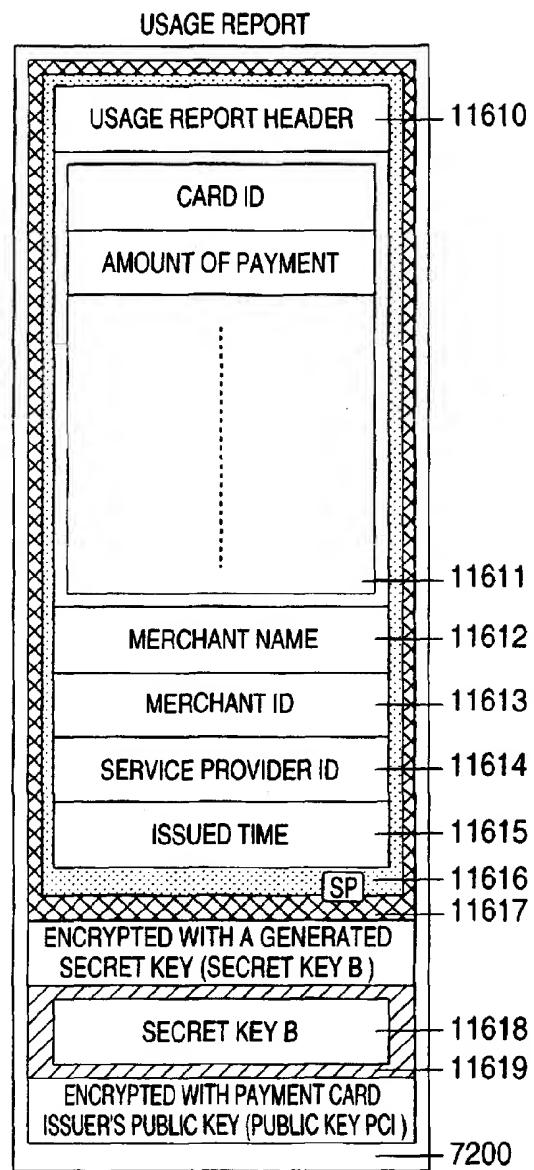


FIG.116C

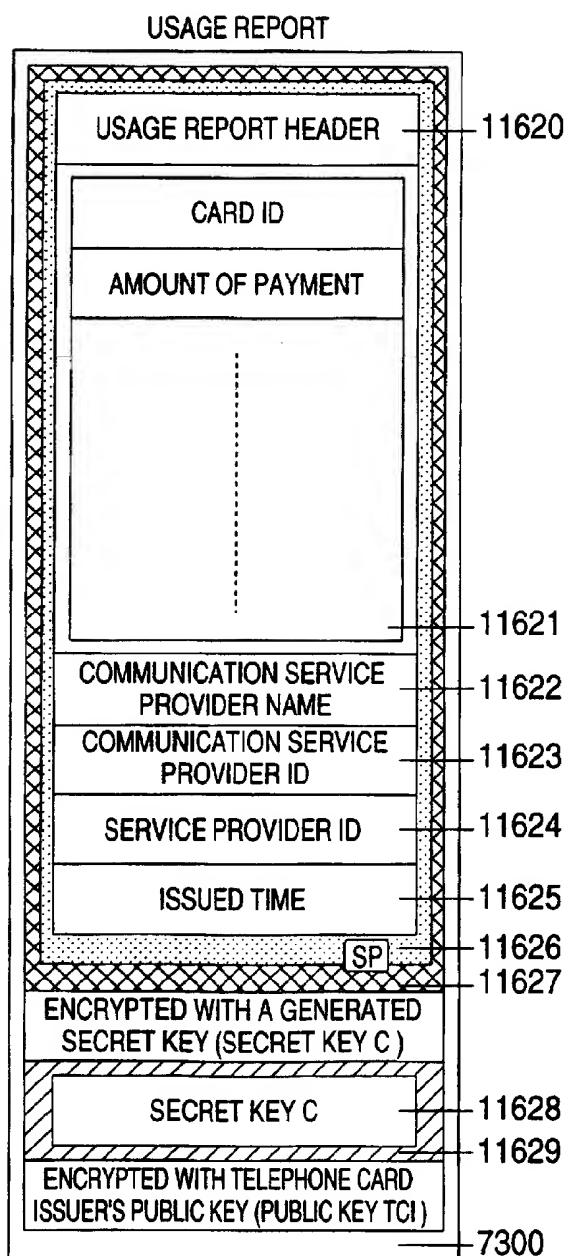


FIG.117A

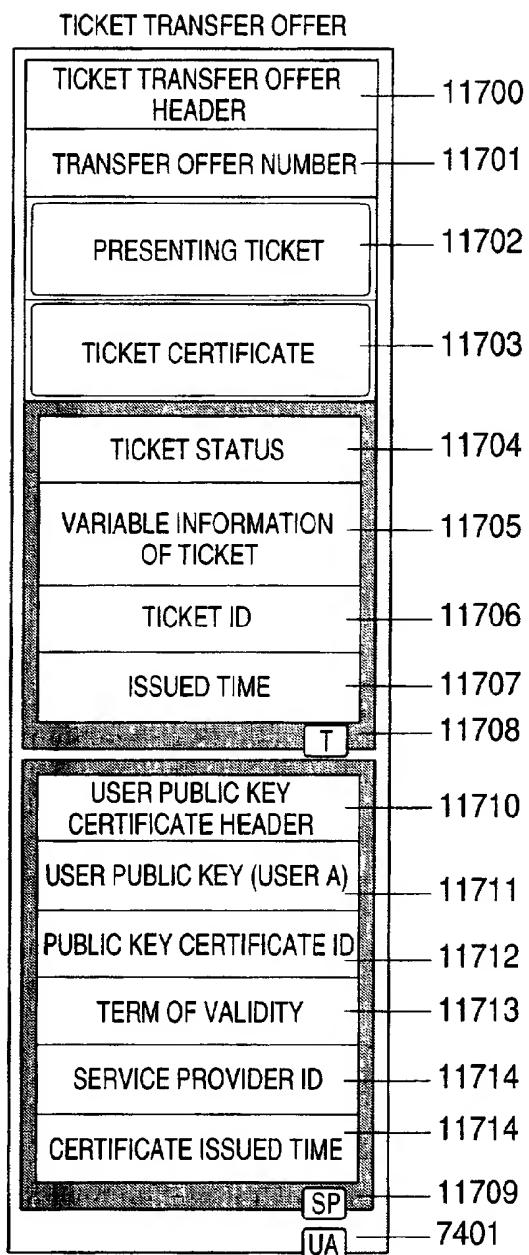


FIG.117B

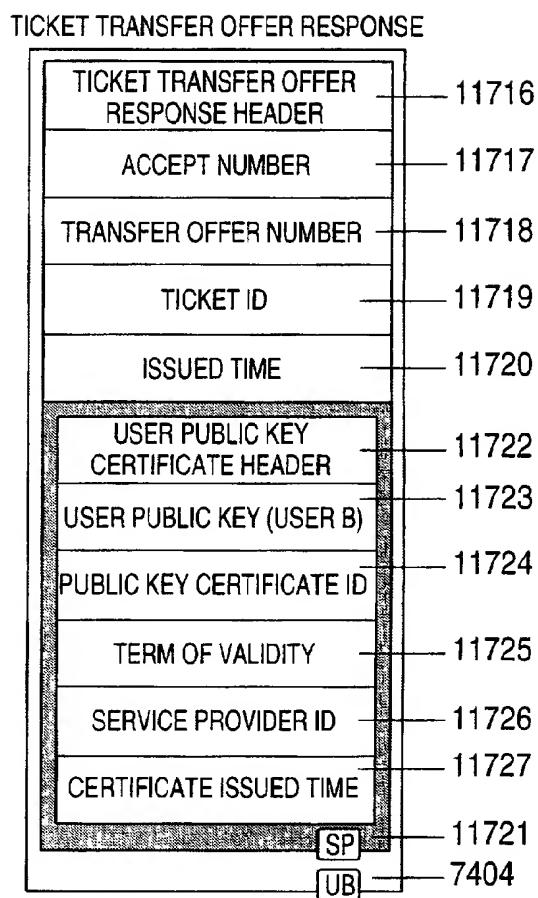


FIG.118A

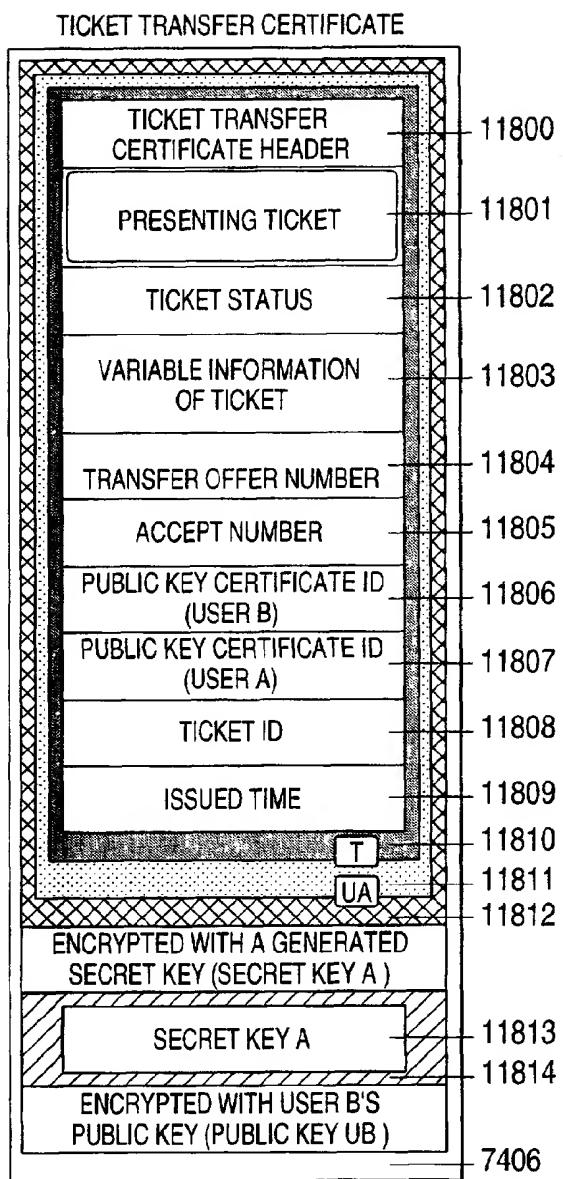


FIG.118B

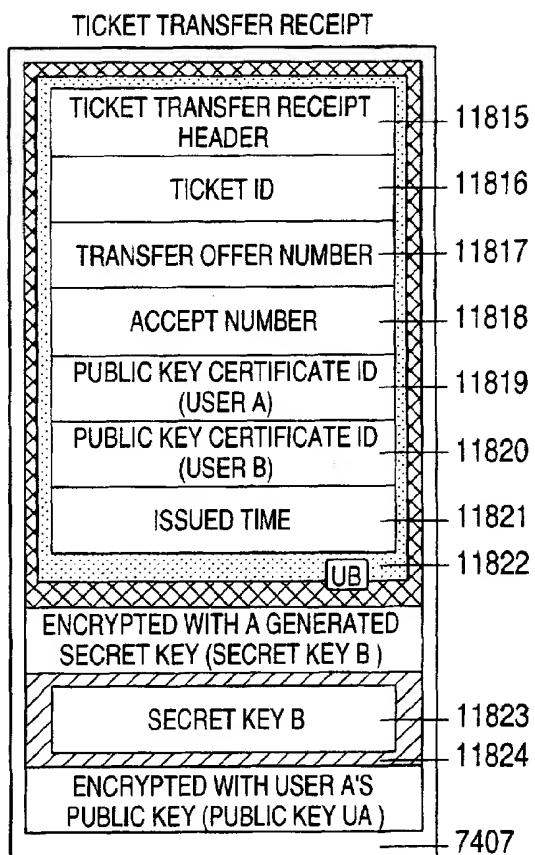


FIG.119A

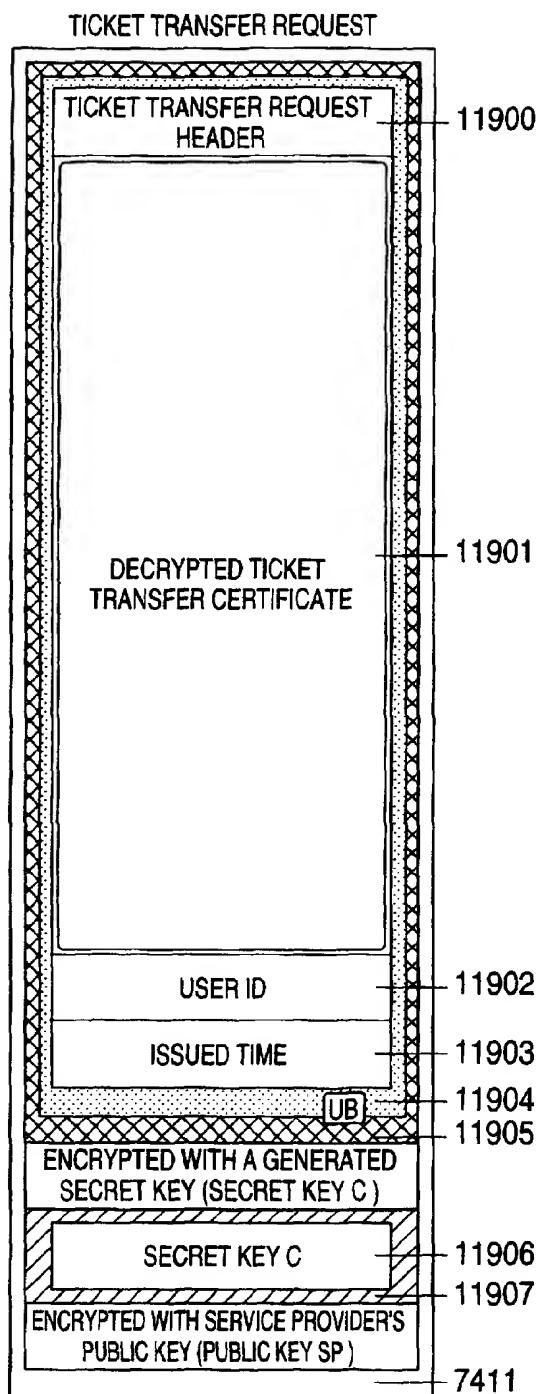


FIG.119B

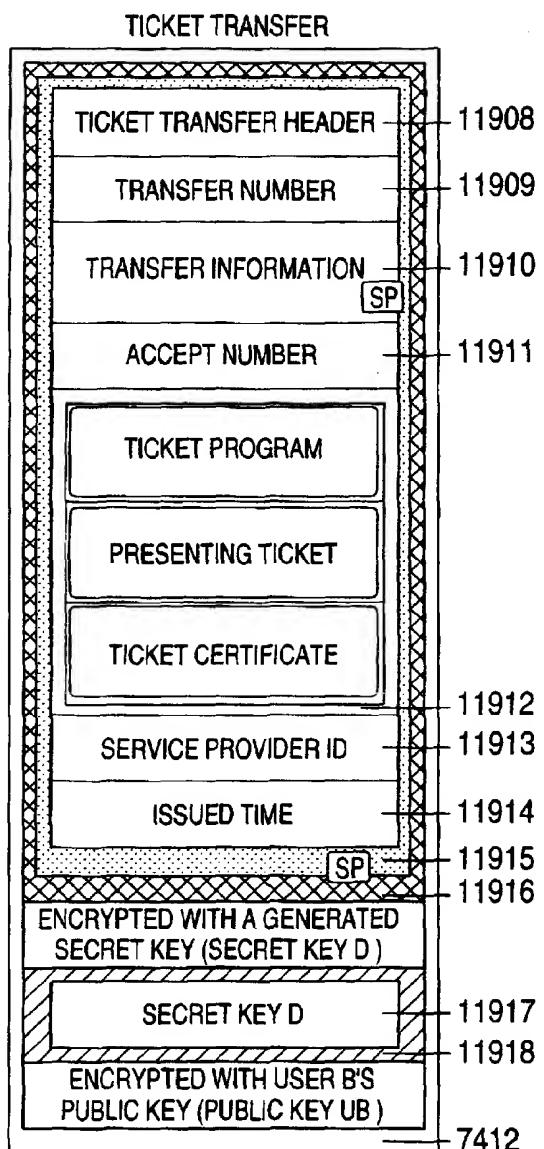


FIG.120A

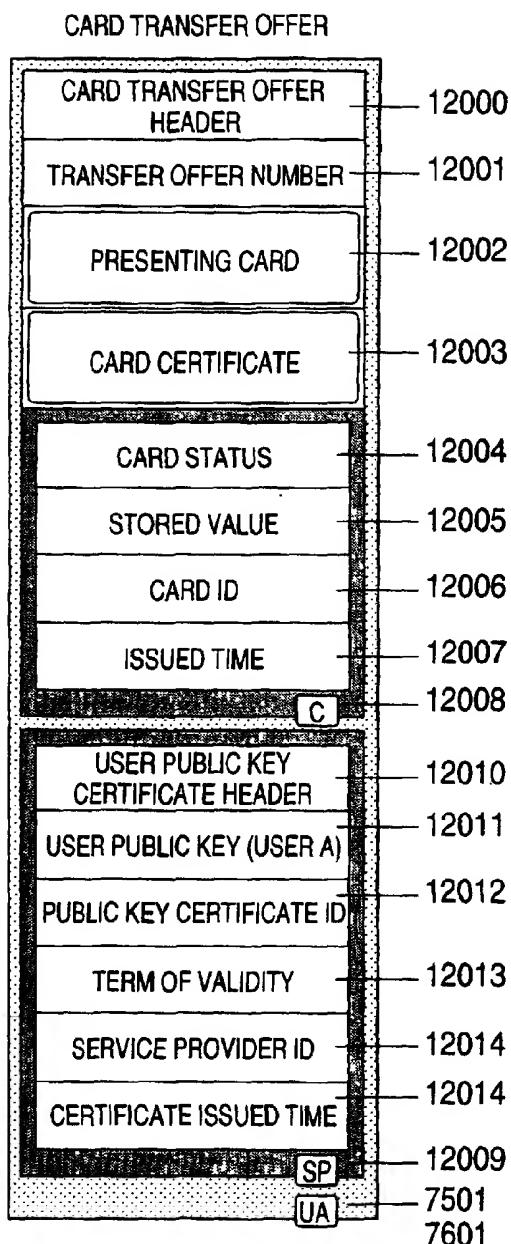


FIG.120B

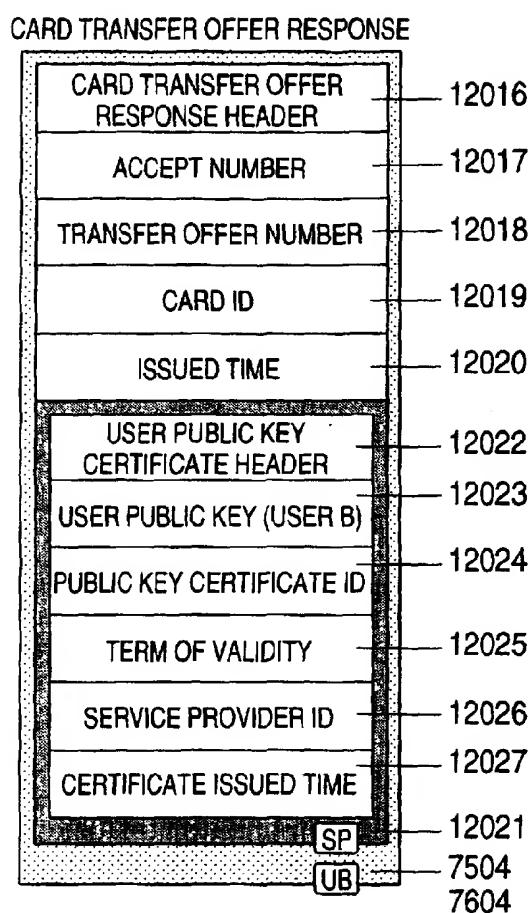


FIG.121A

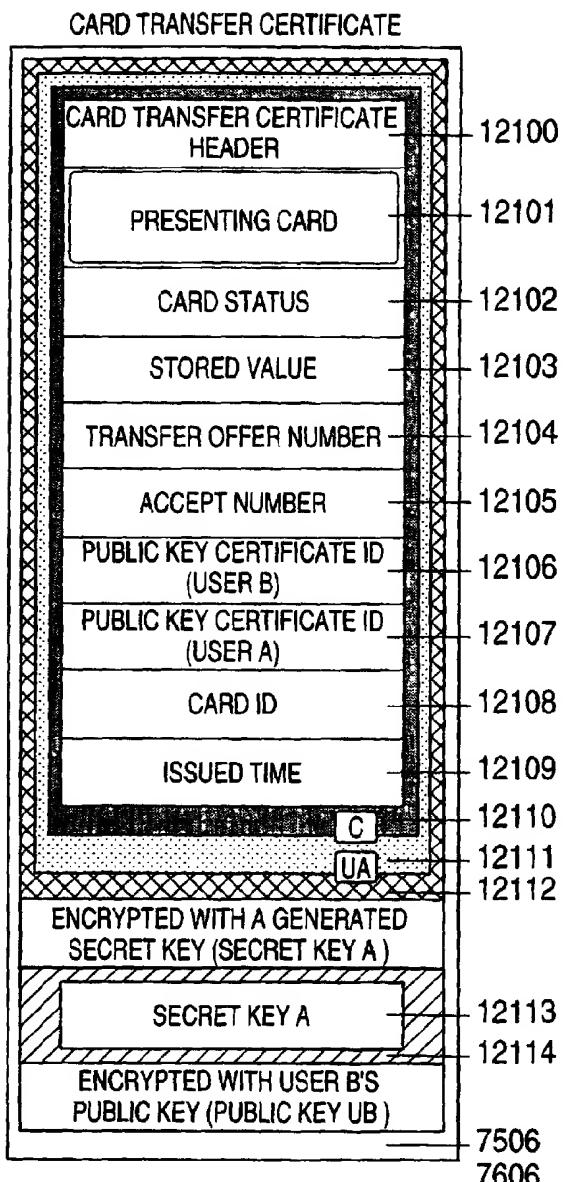


FIG.121B

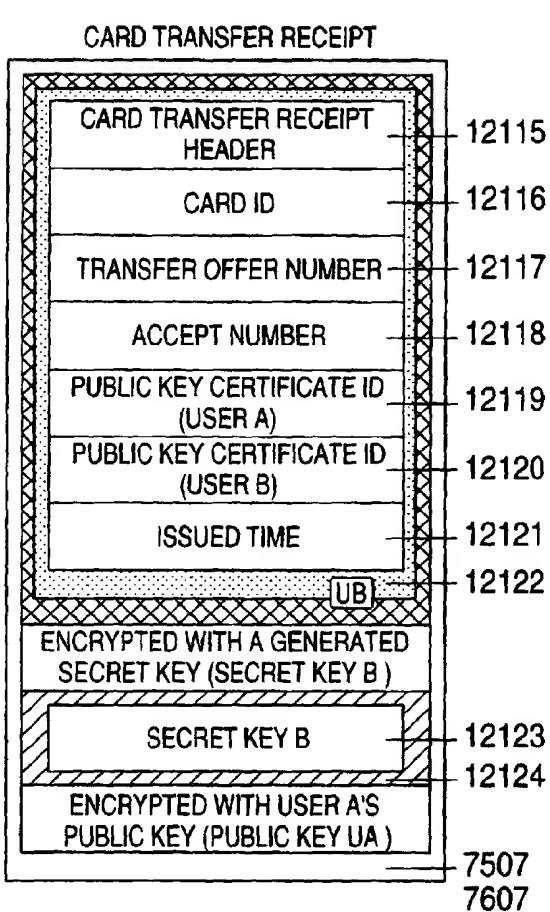


FIG.122A

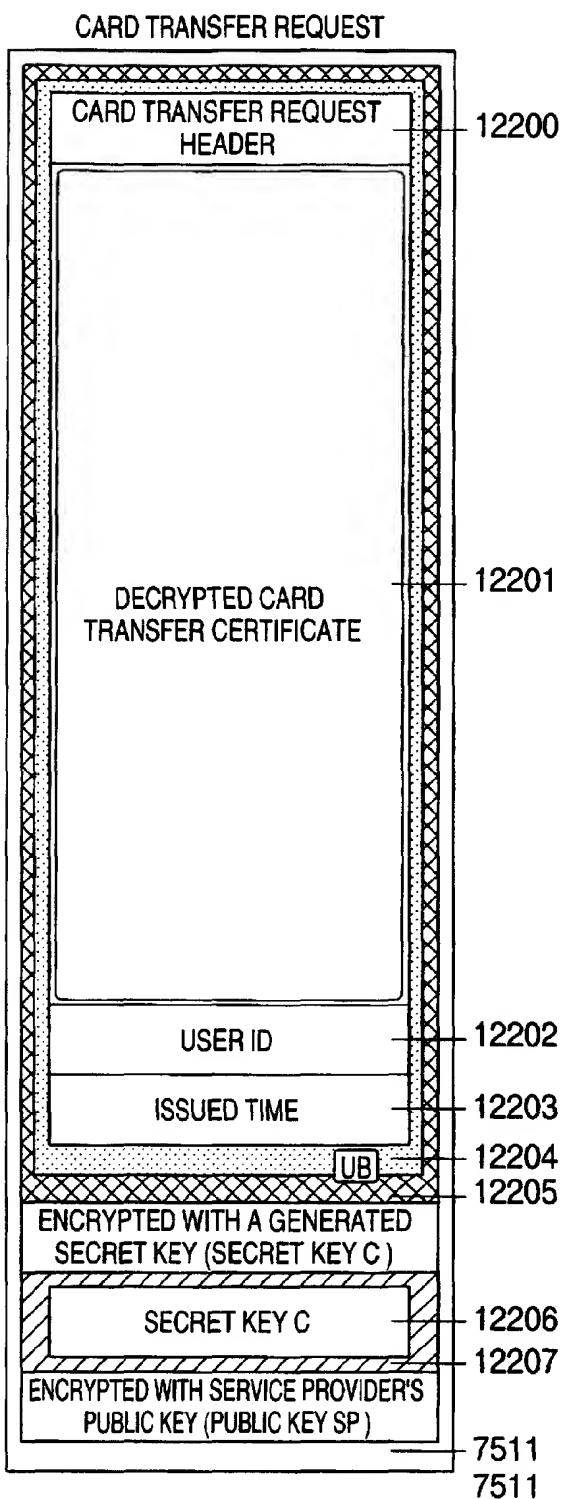


FIG.122B

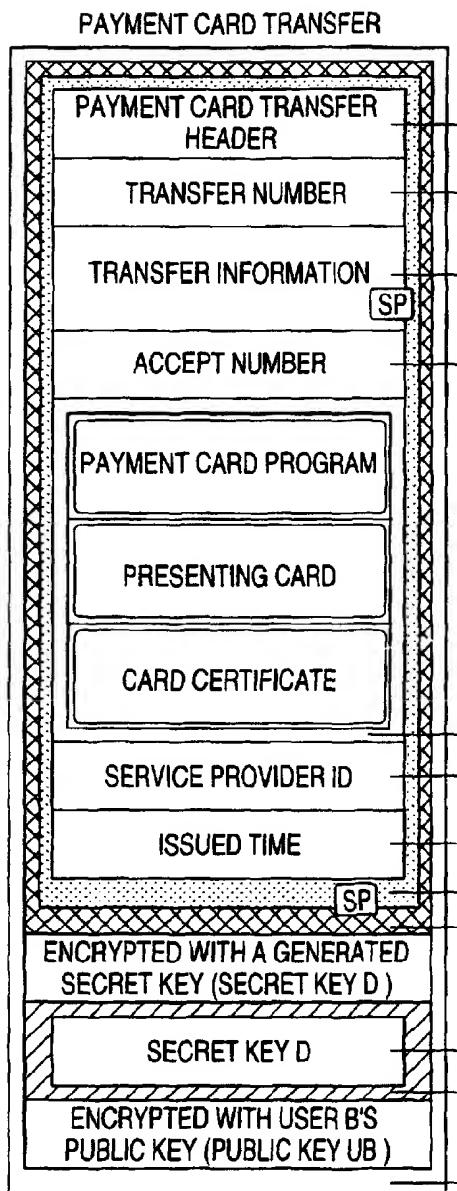


FIG.122C

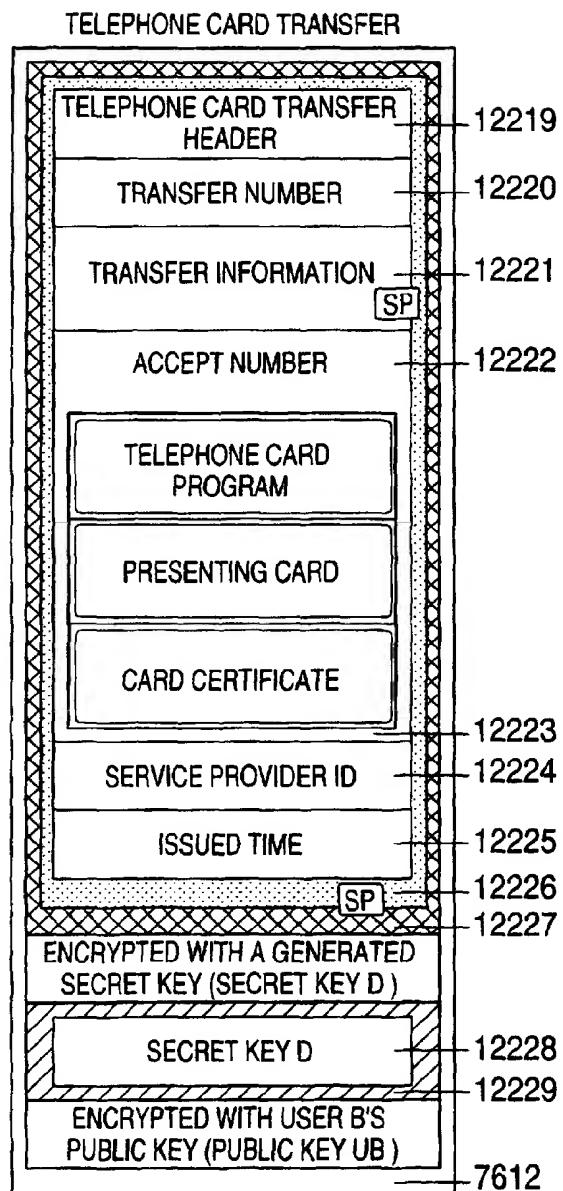


FIG. 123A

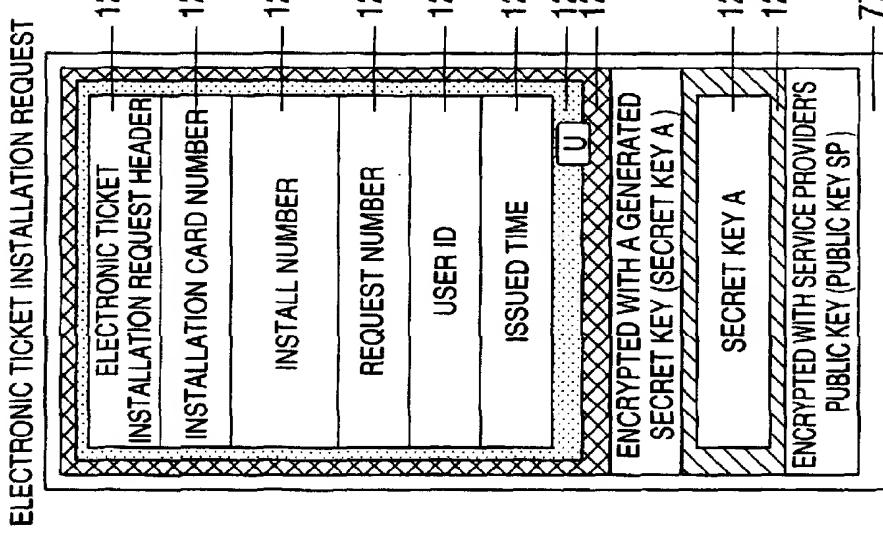


FIG. 123B

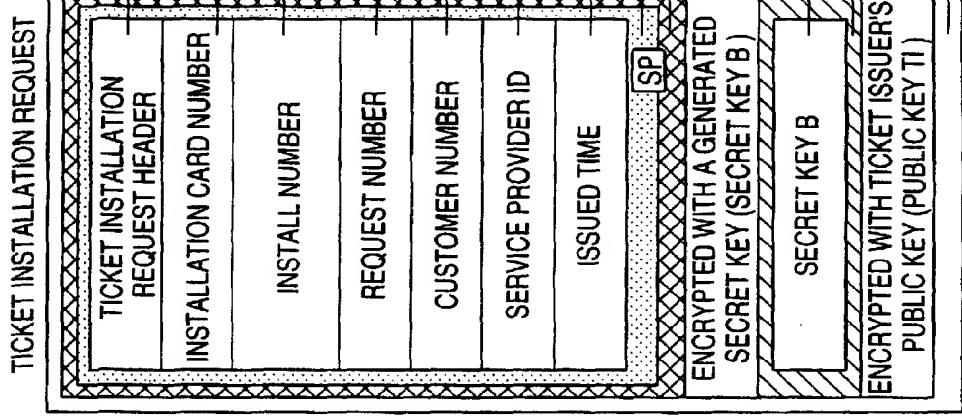


FIG.124A

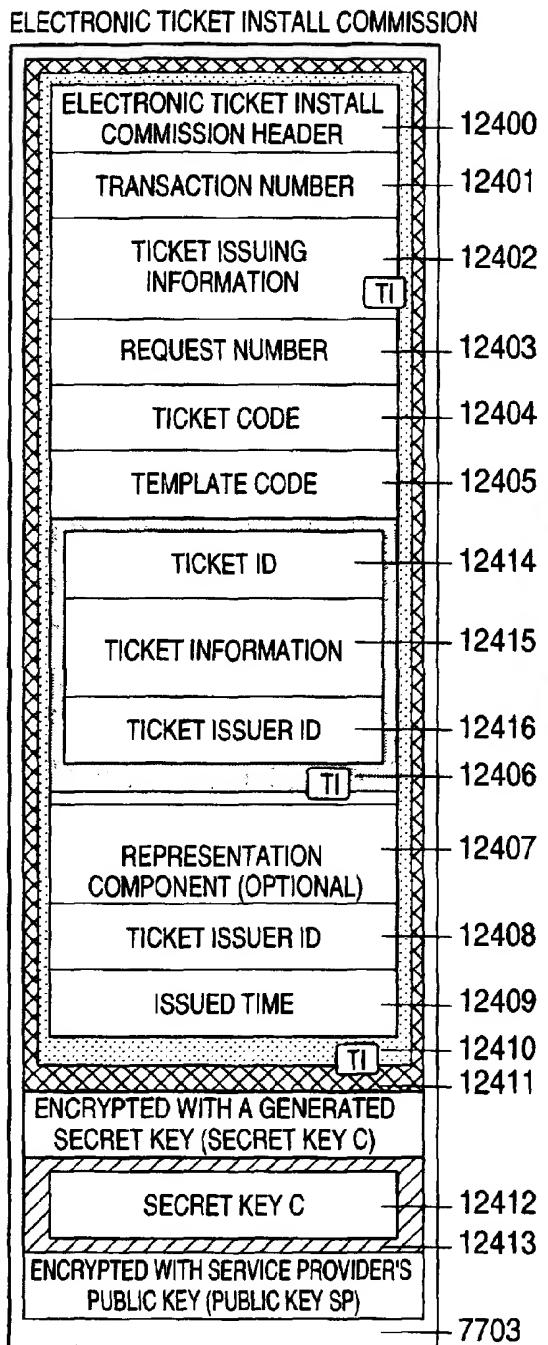


FIG.124B

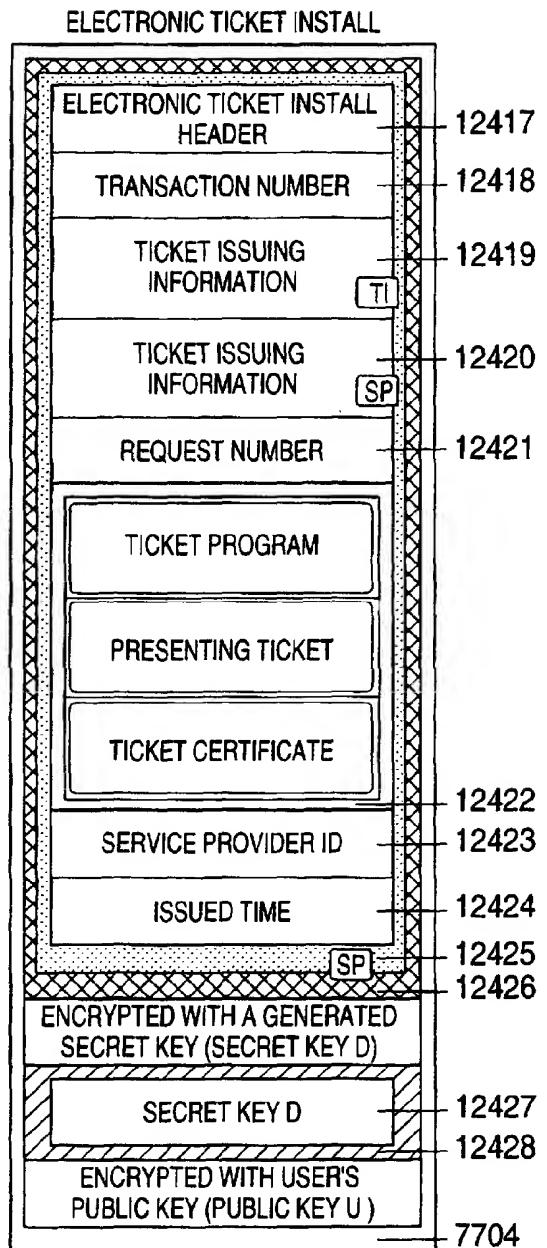


FIG. 125A

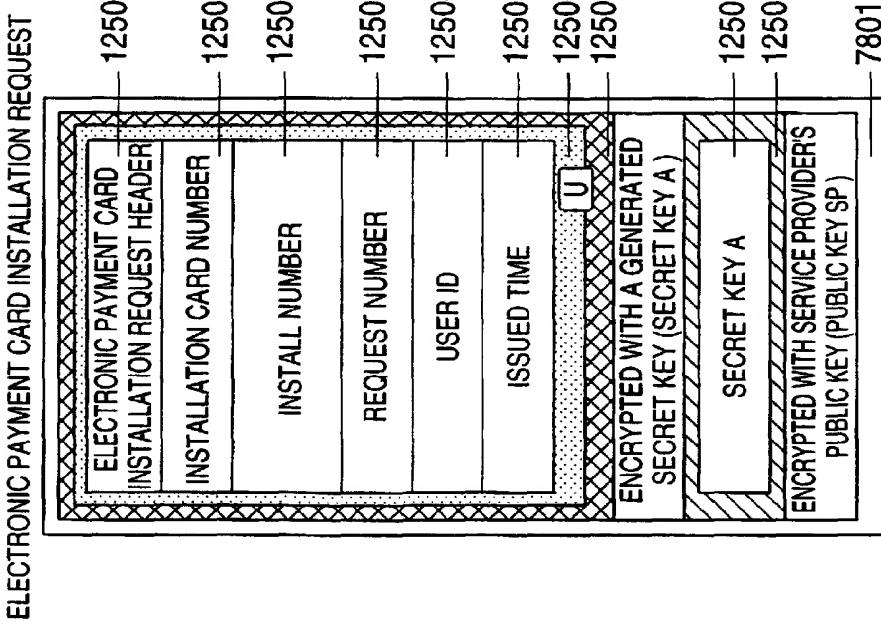


FIG. 125B

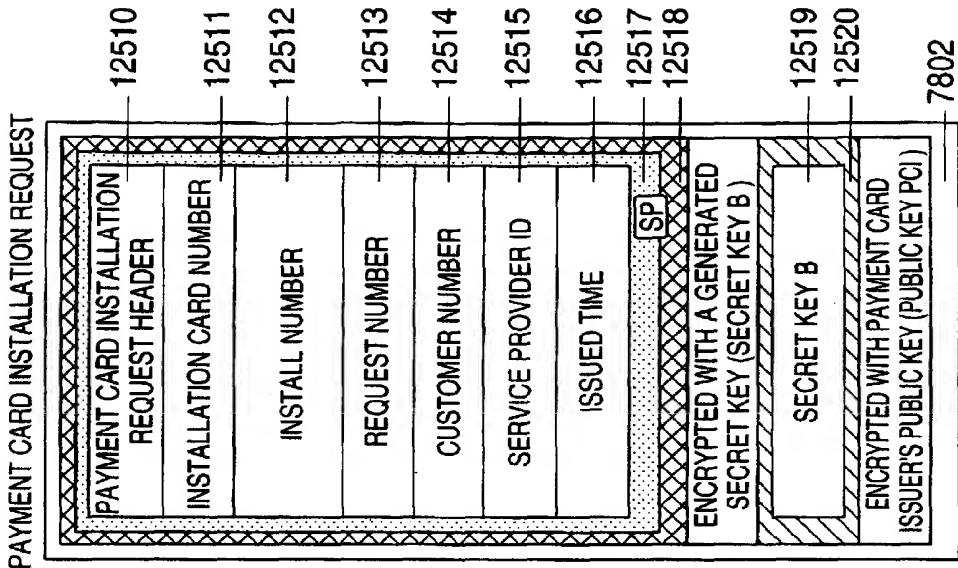


FIG.126A

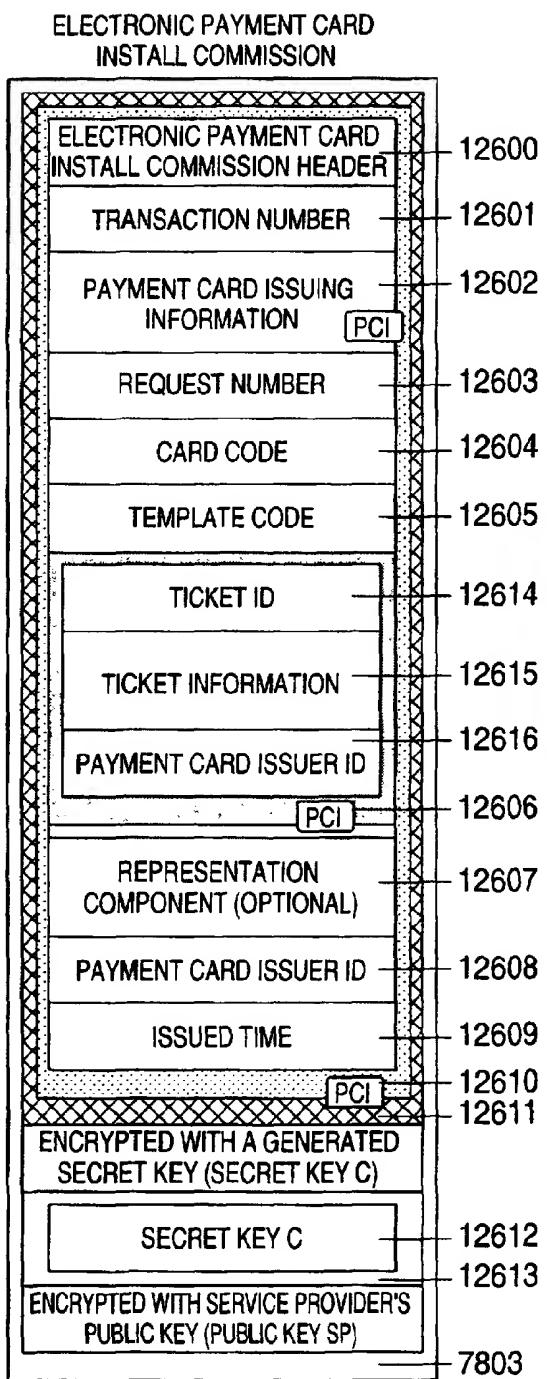


FIG.126B

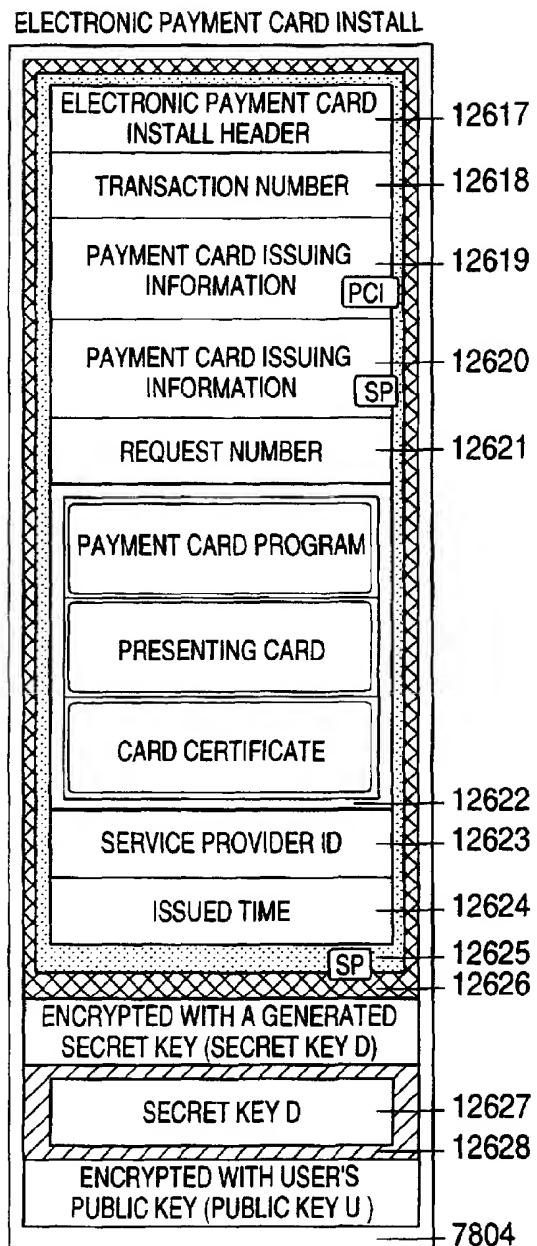


FIG. 127A

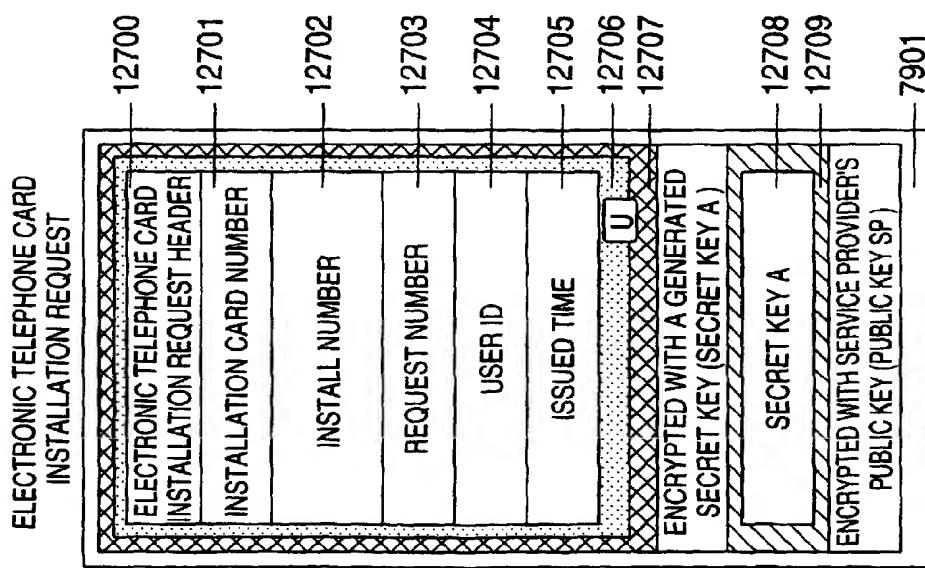


FIG. 127B

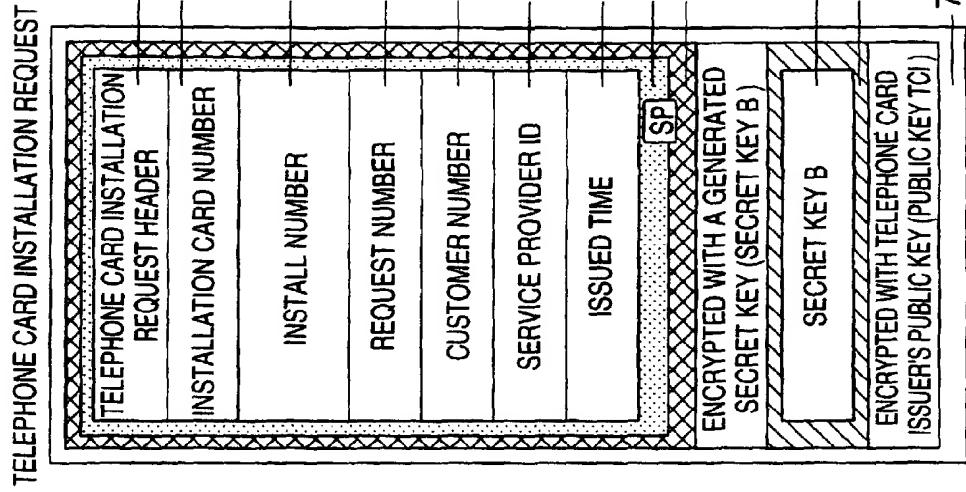


FIG.128A

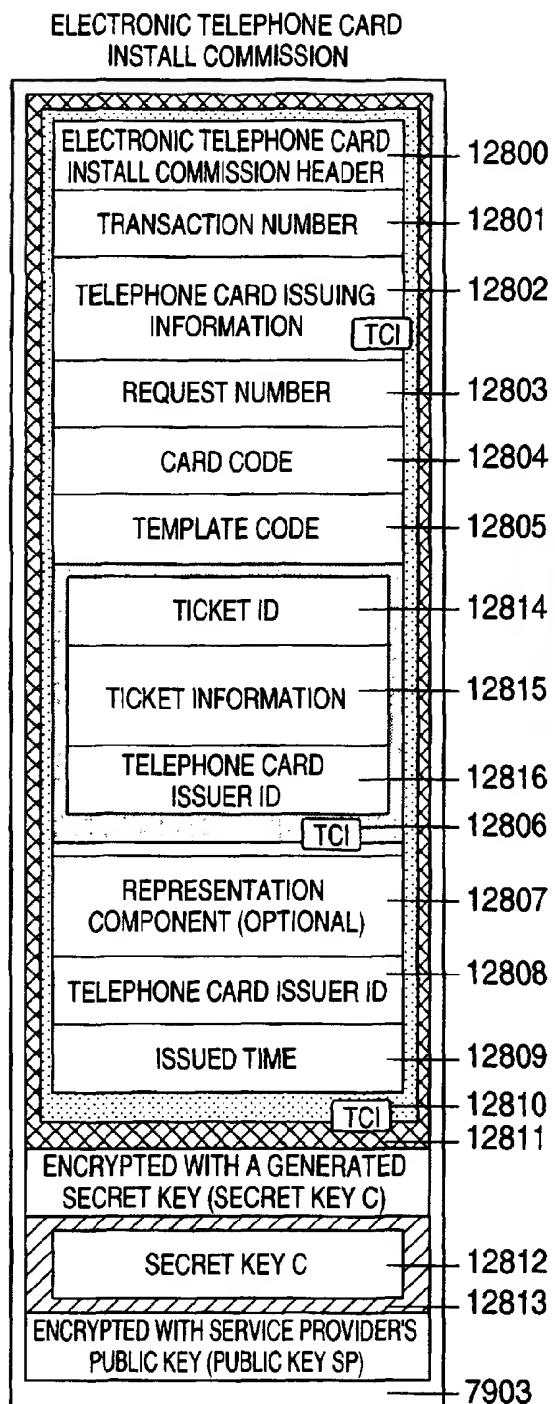


FIG.128B

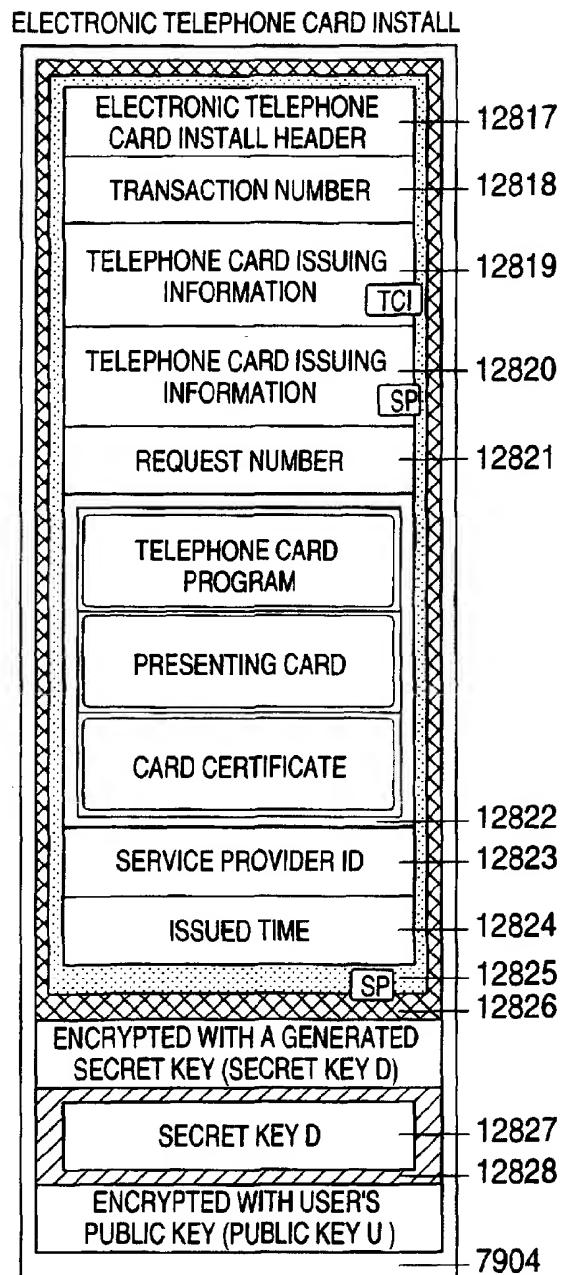


FIG.129A

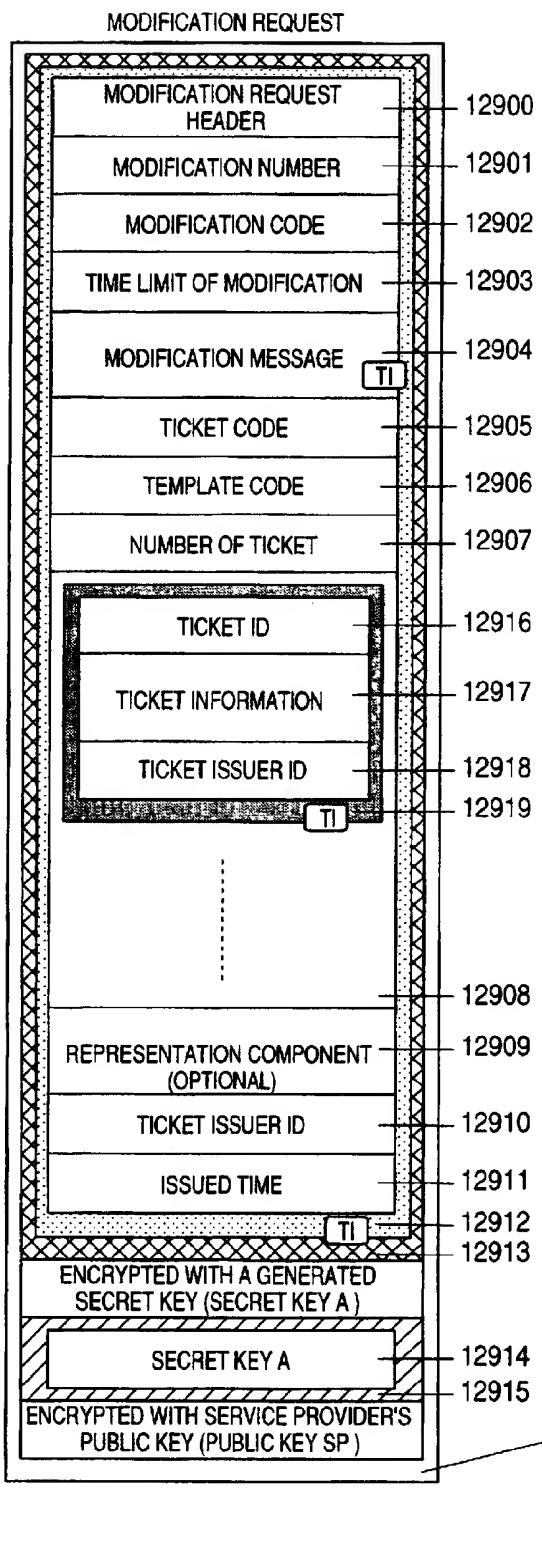


FIG.129B

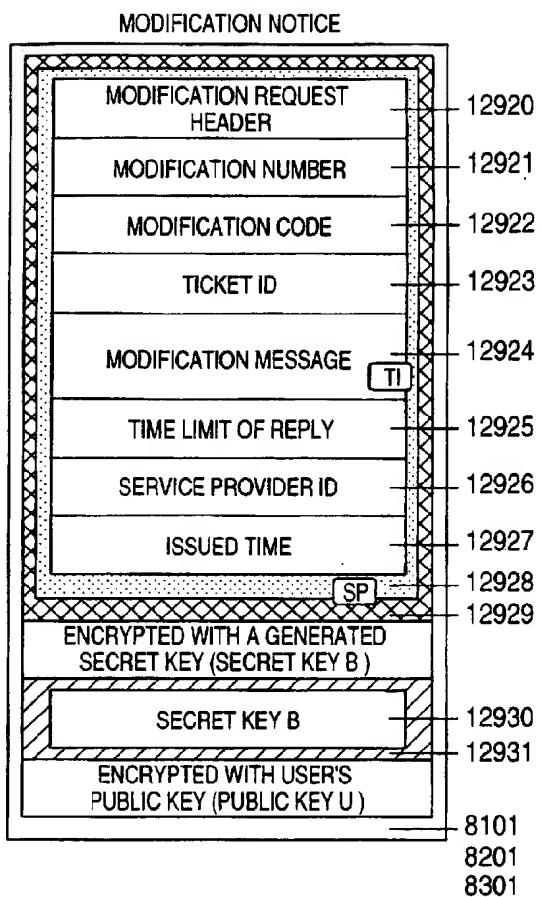


FIG.130A

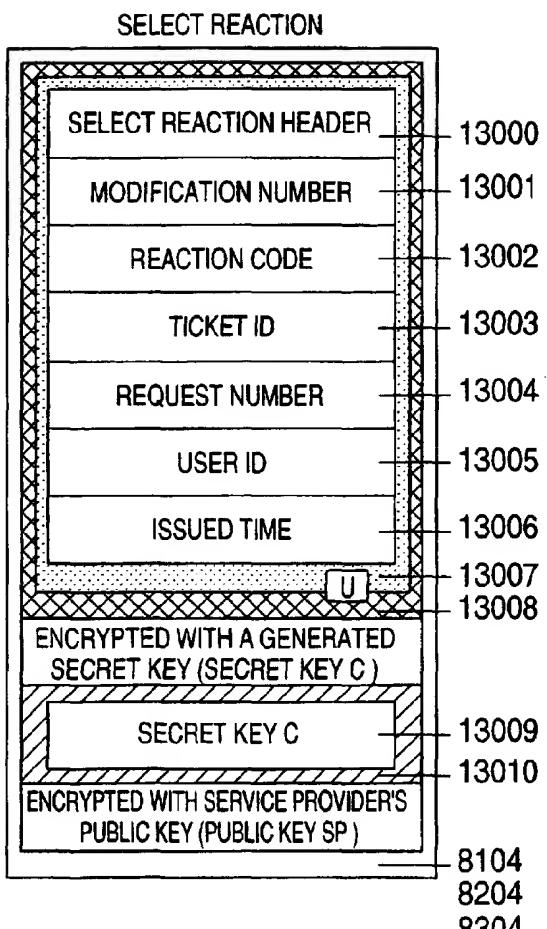
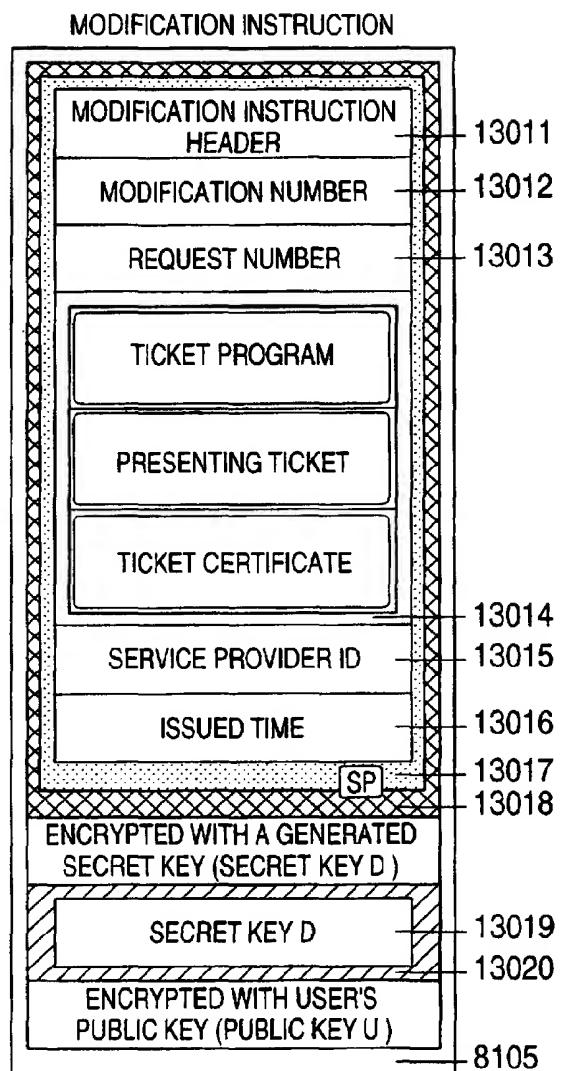
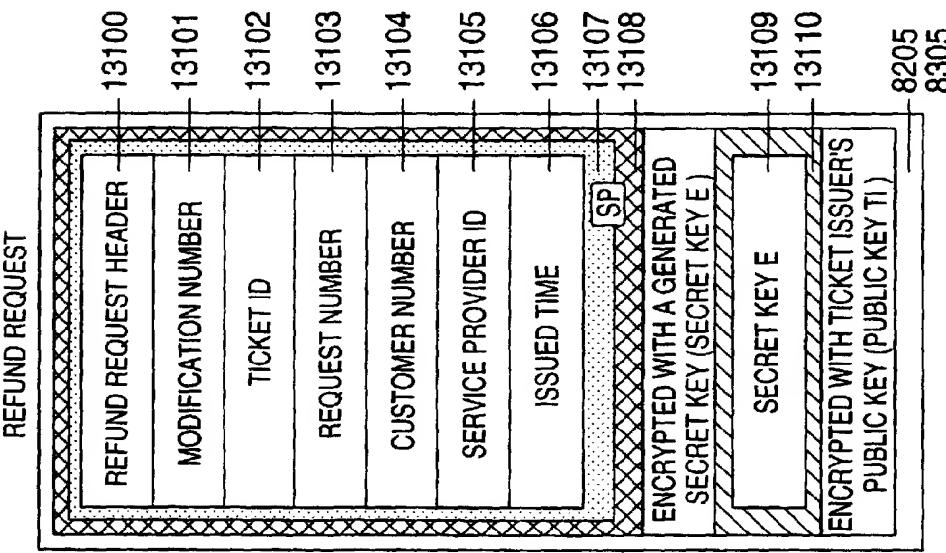


FIG.130B



**FIG. 131A**



**FIG. 131B**

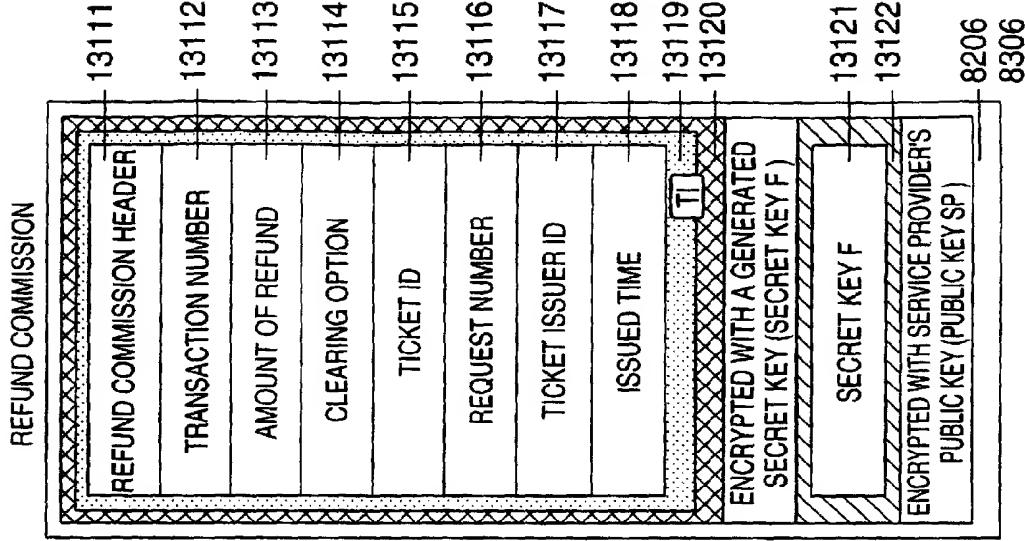


FIG.132A

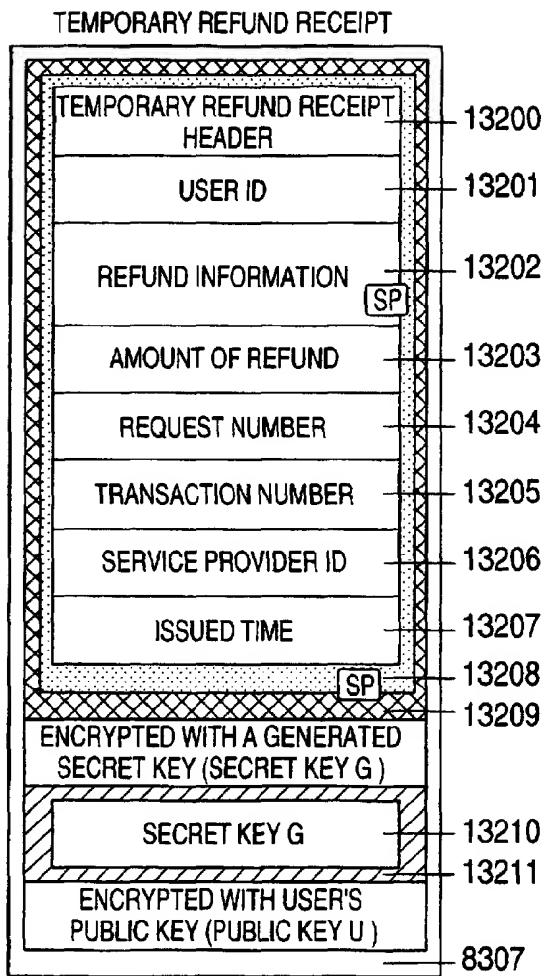


FIG.132B

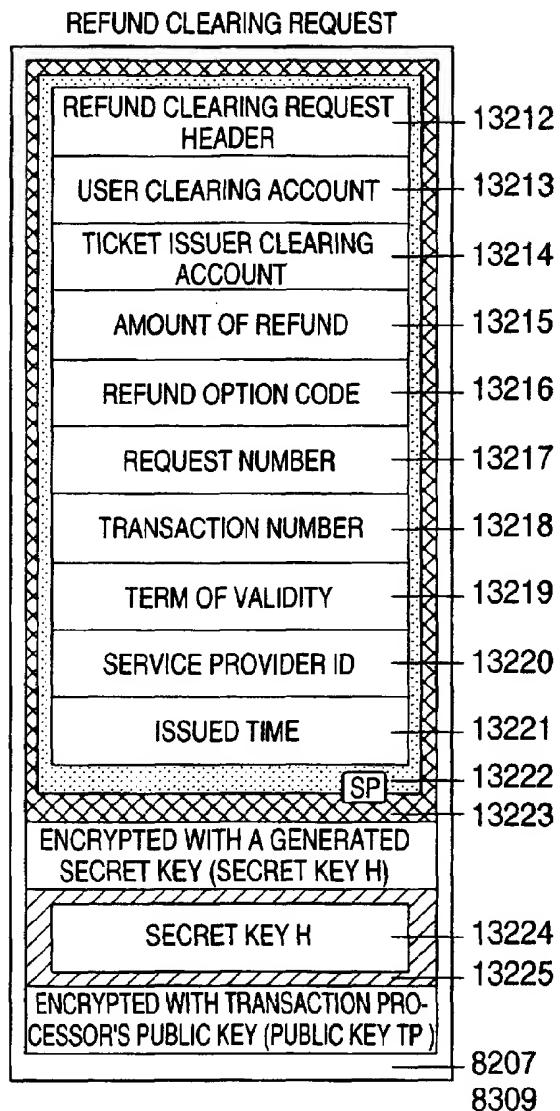


FIG.133A

## REFUND CLEARING COMPLETION TP2SP

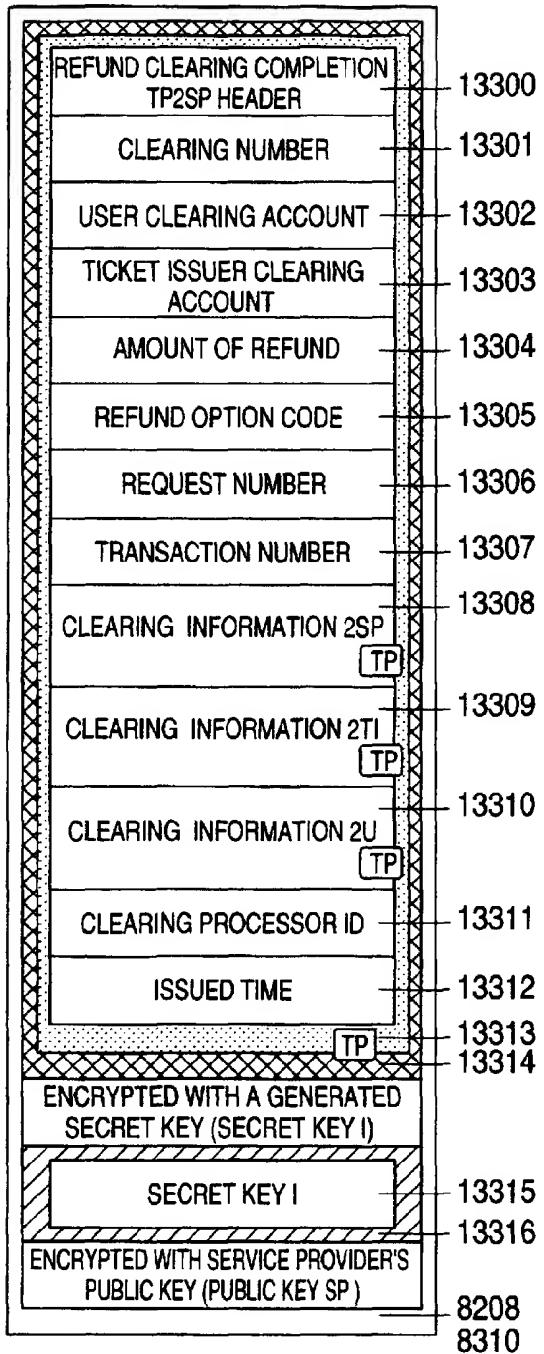


FIG.133B

## REFUND CLEARING COMPLETION SP2TI

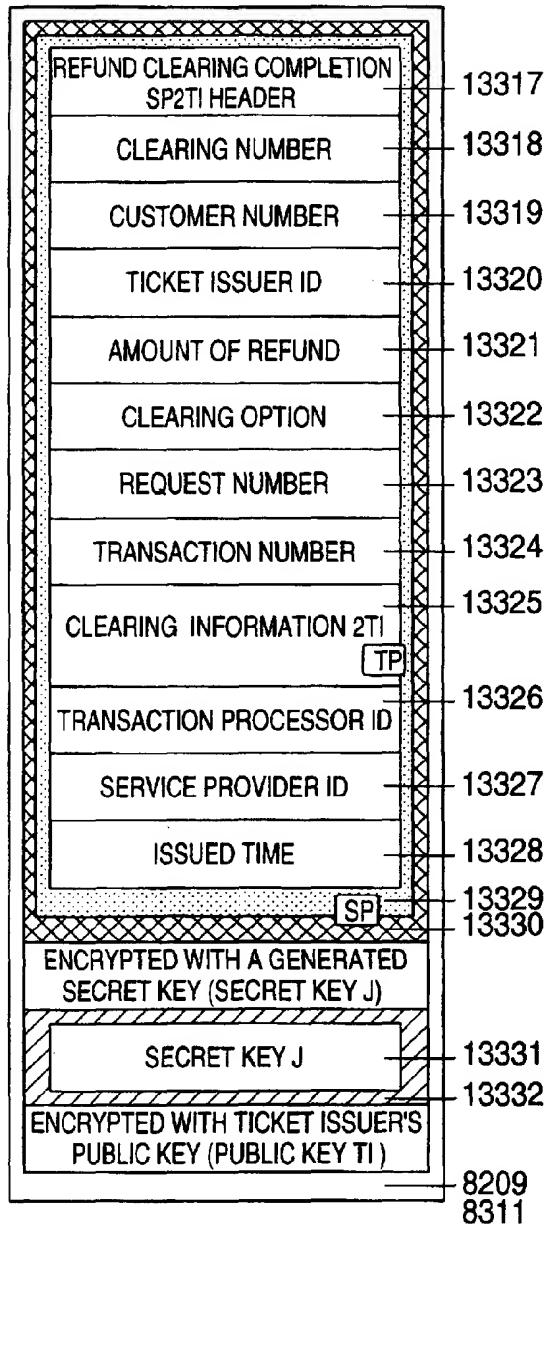


FIG.134A

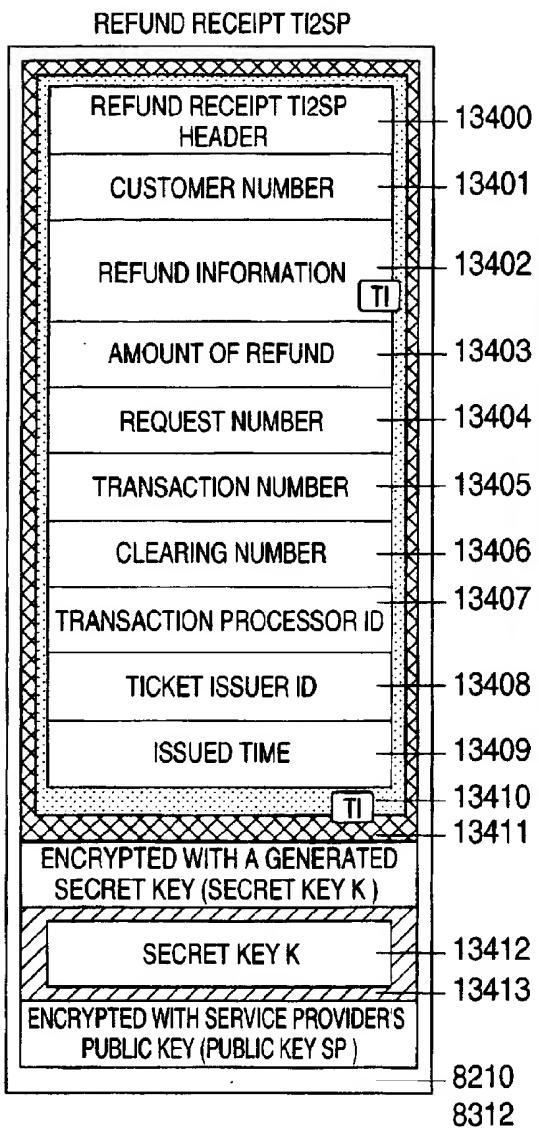


FIG.134B

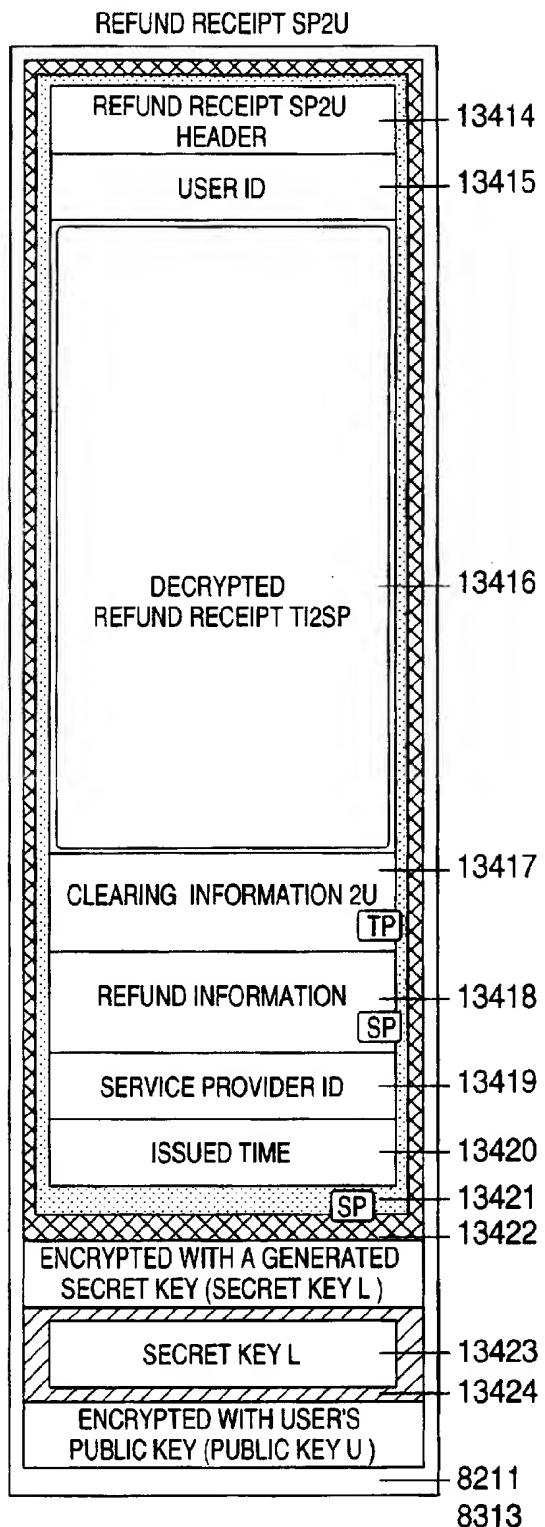


FIG. 135A

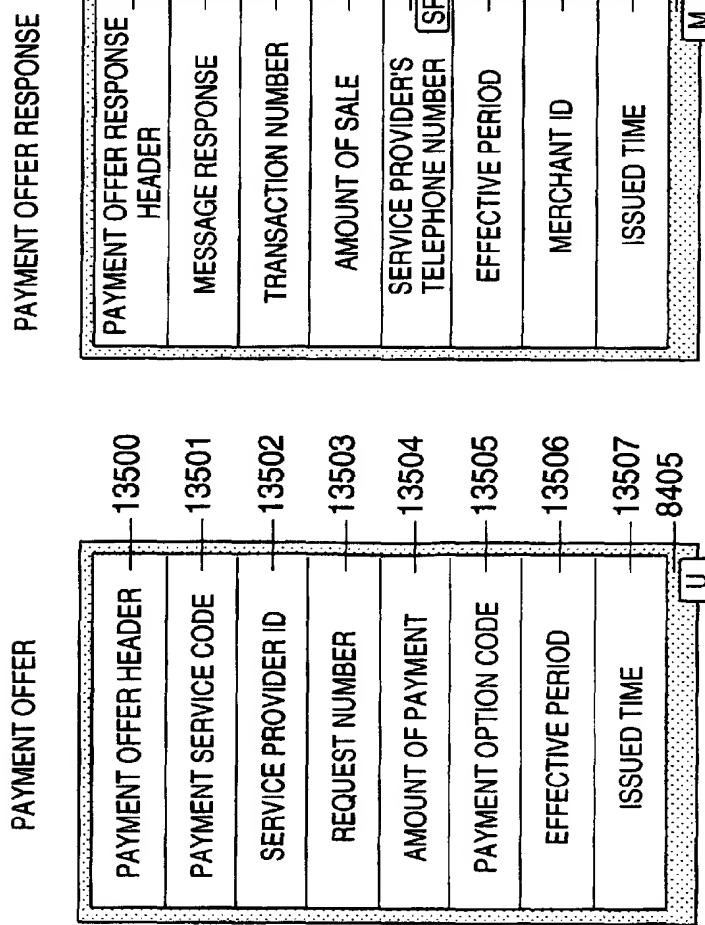


FIG. 135B

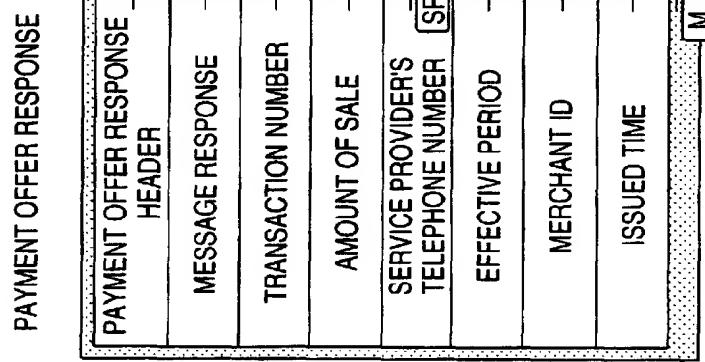


FIG. 135C

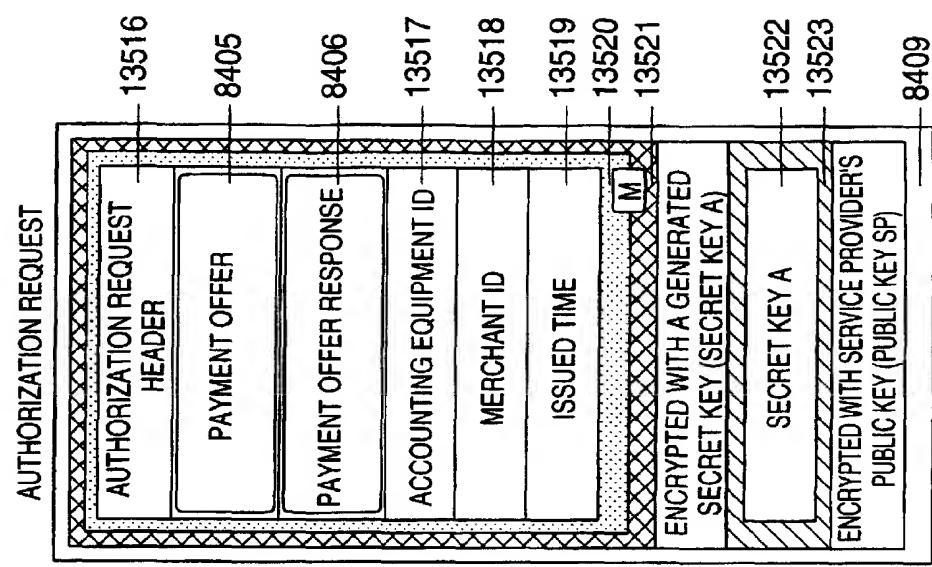


FIG.135D

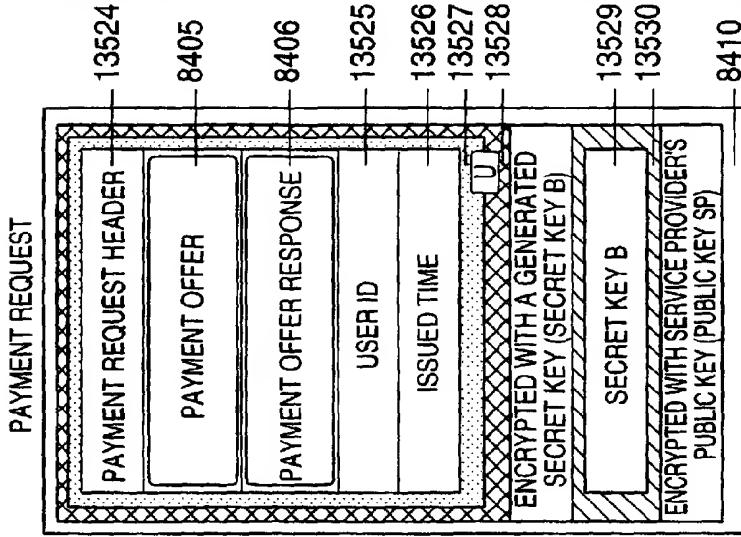


FIG.135E

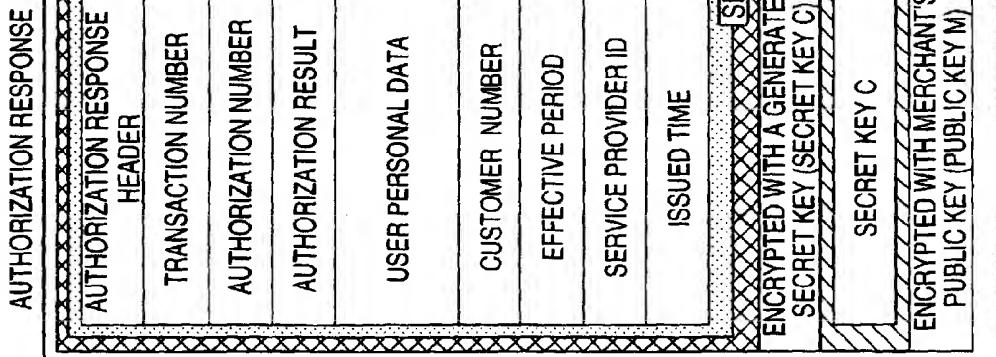


FIG.135F

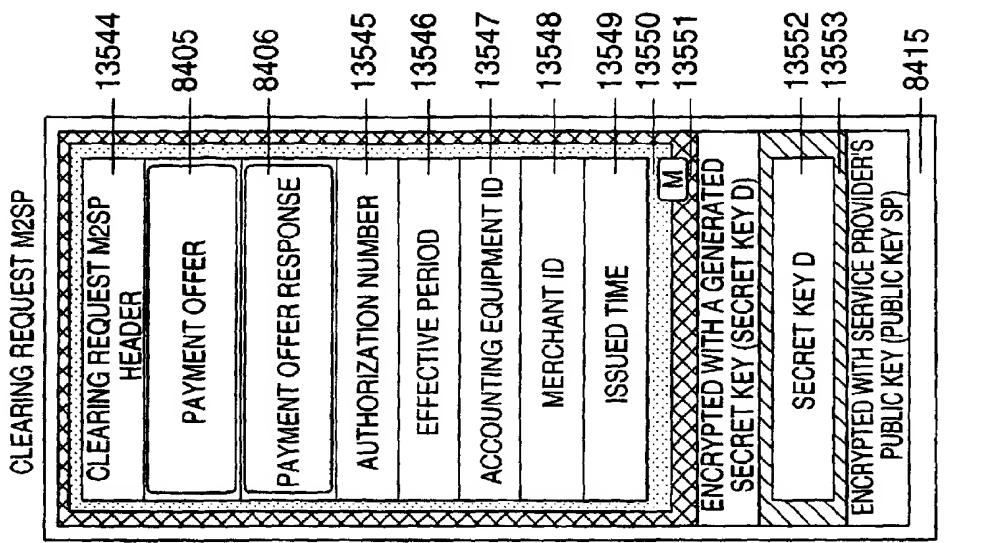


FIG.136A

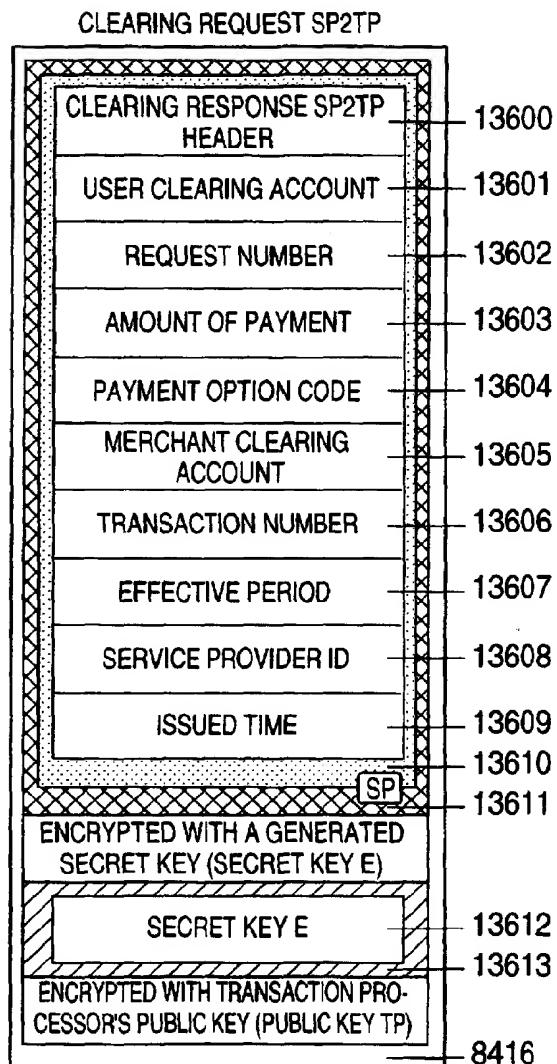


FIG.136B

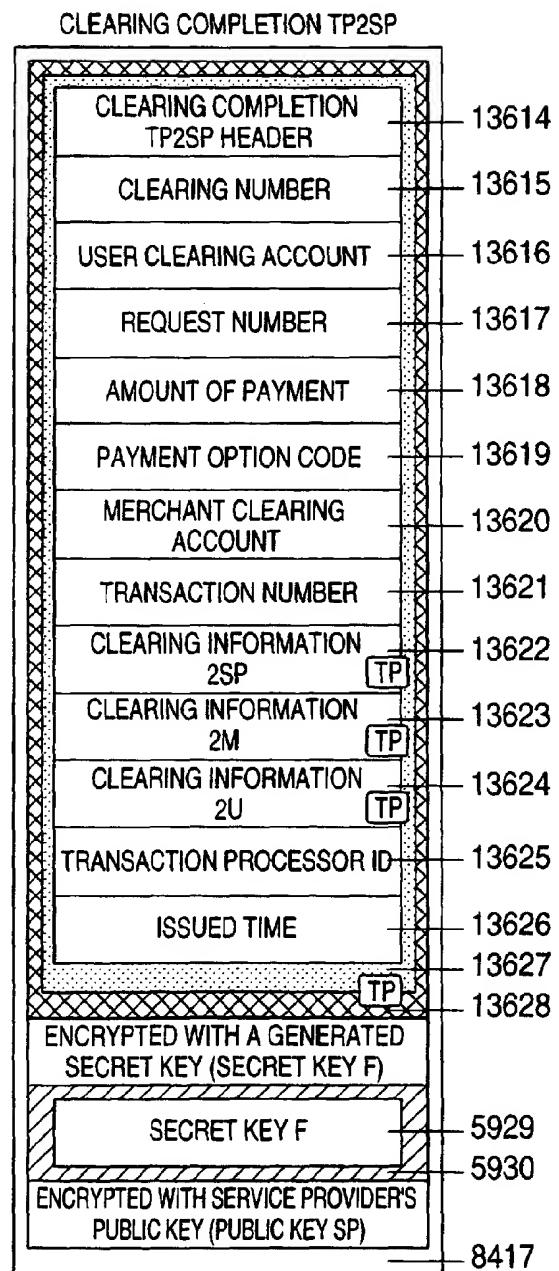


FIG.136C

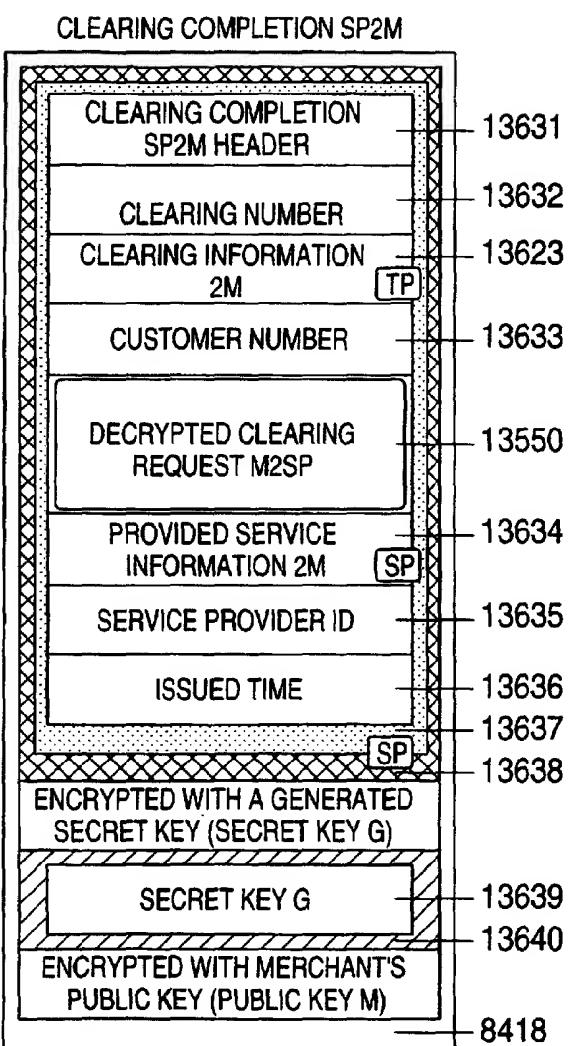


FIG.137A

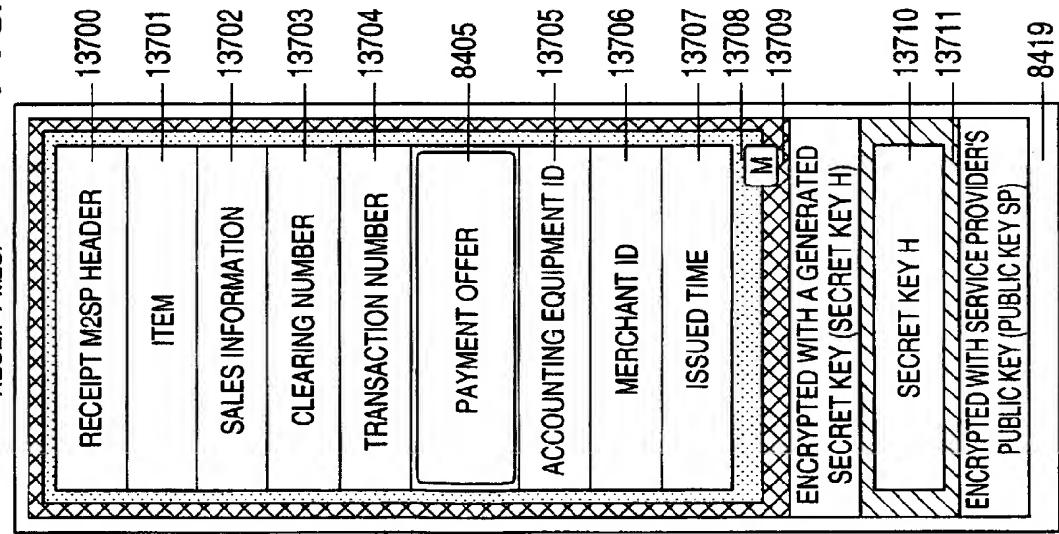


FIG.137B

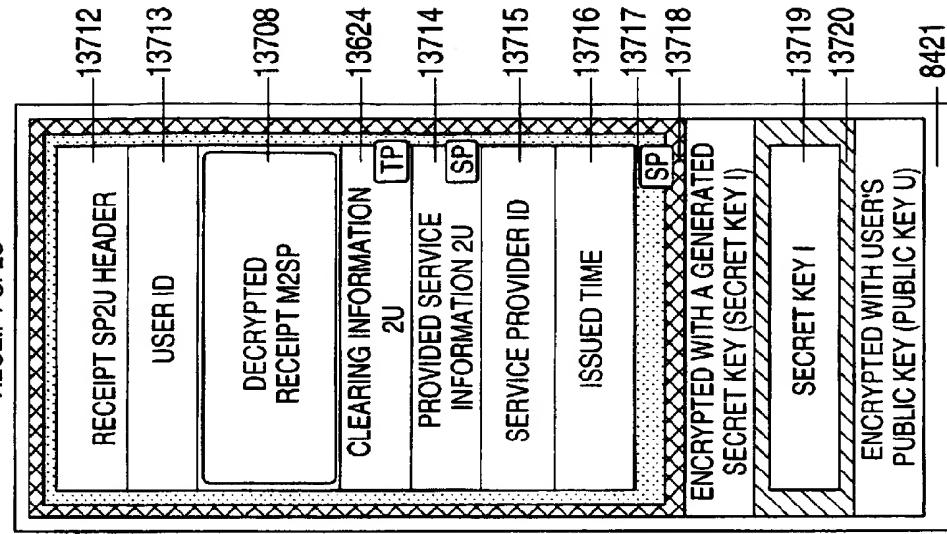
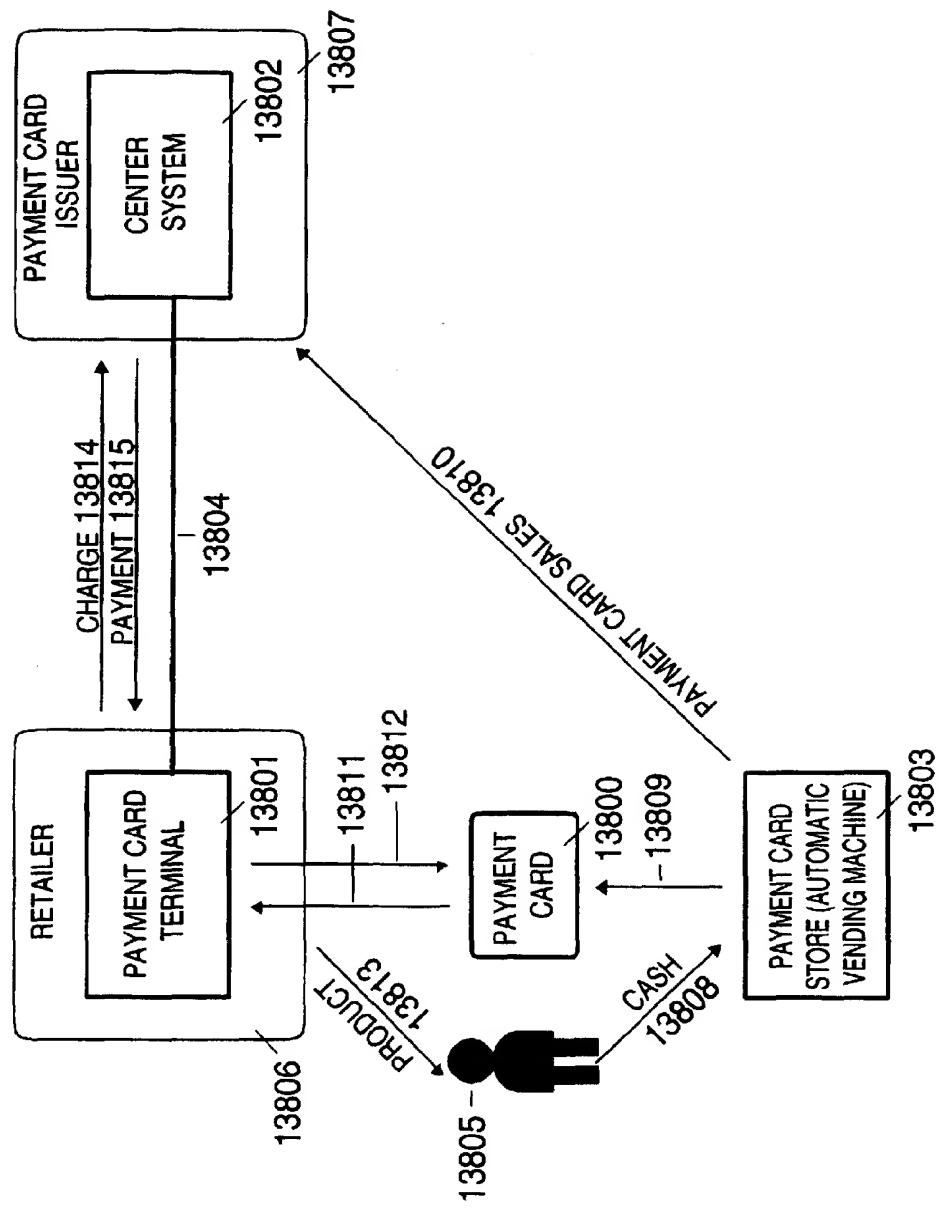


FIG. 138A



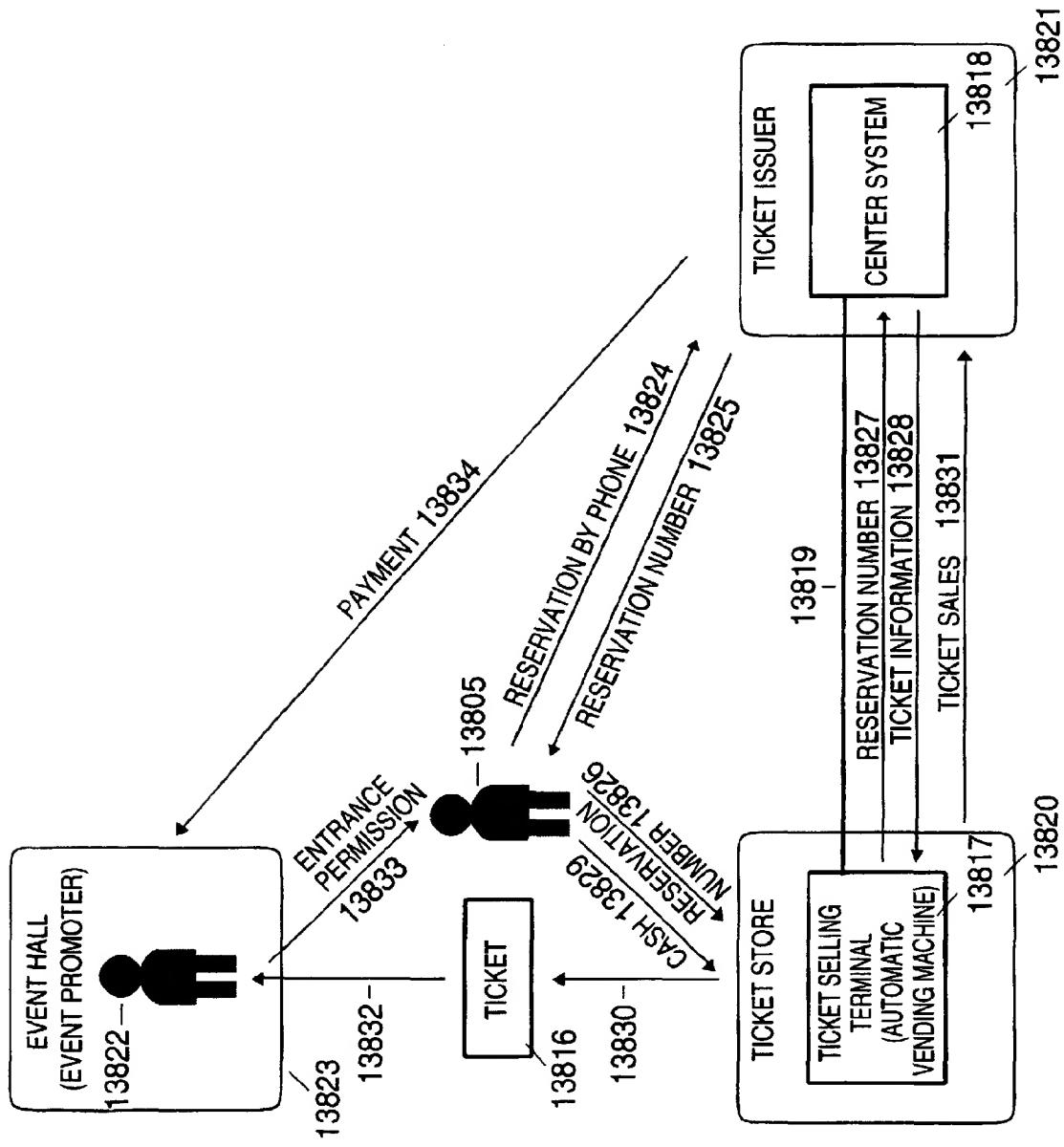


FIG. 138B

FIG. 139A

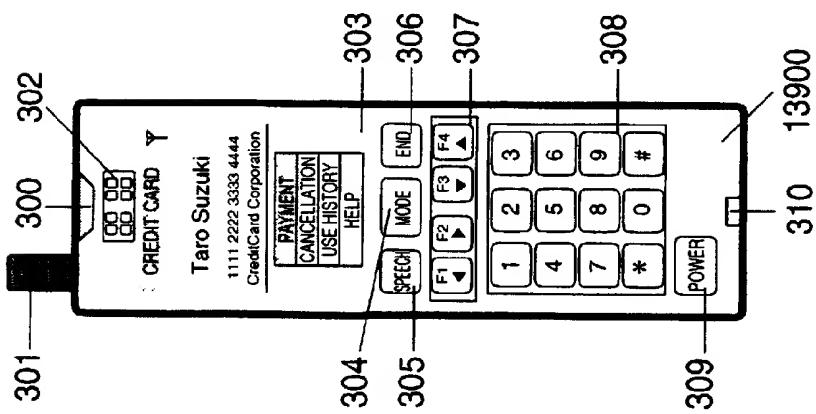


FIG. 139B

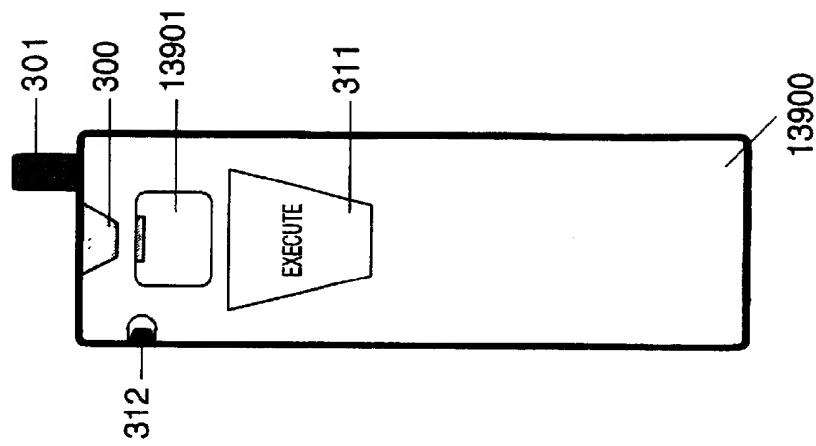


FIG. 140

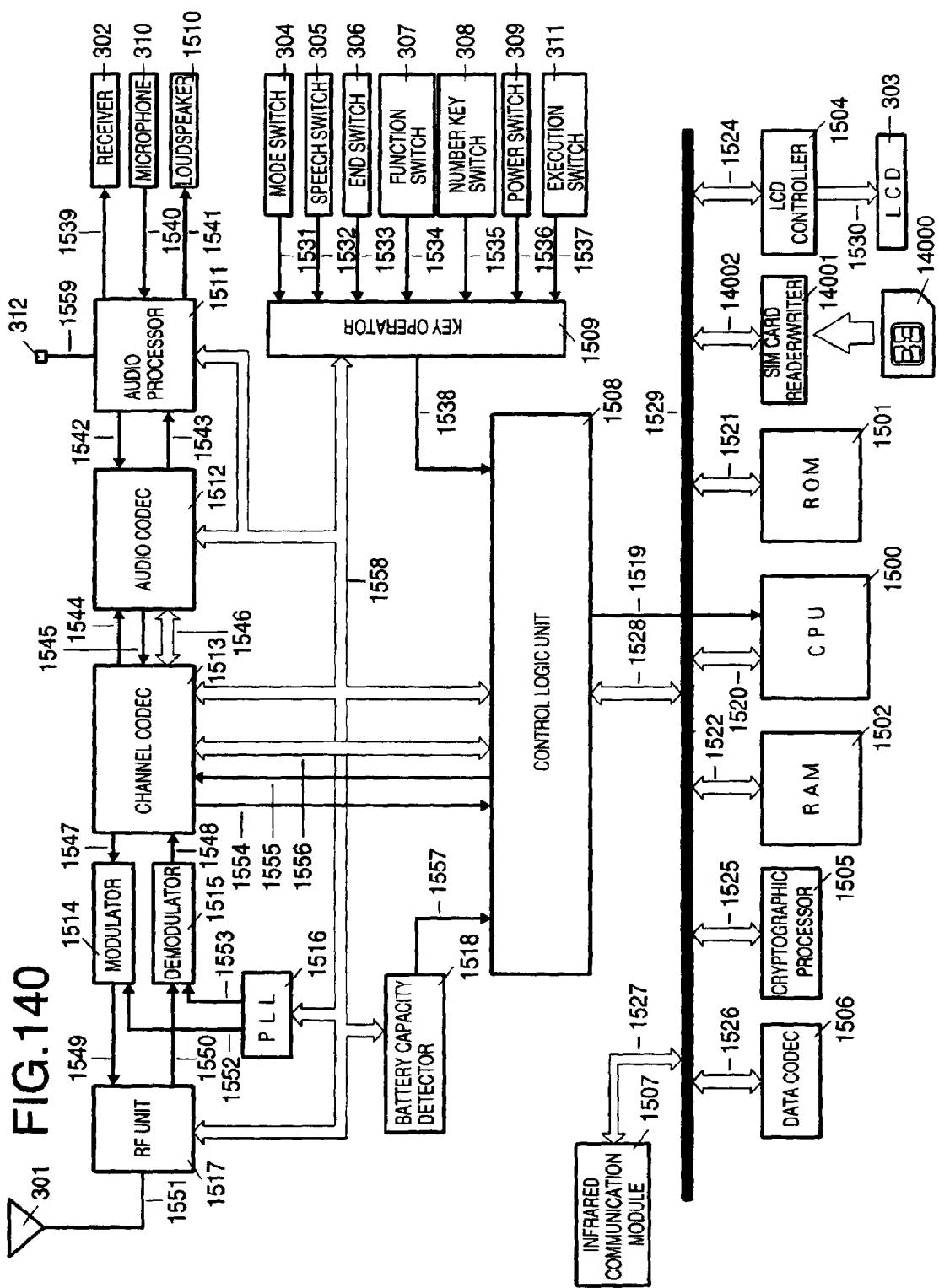


FIG.141A

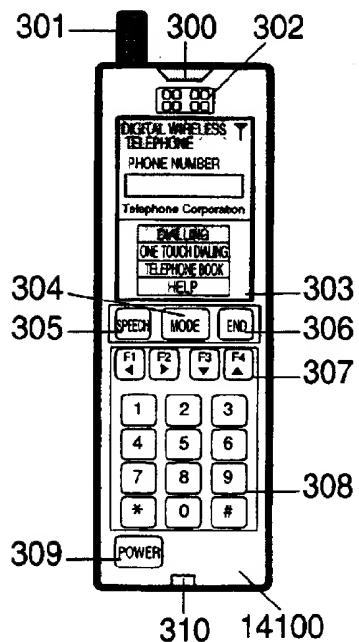


FIG.141B

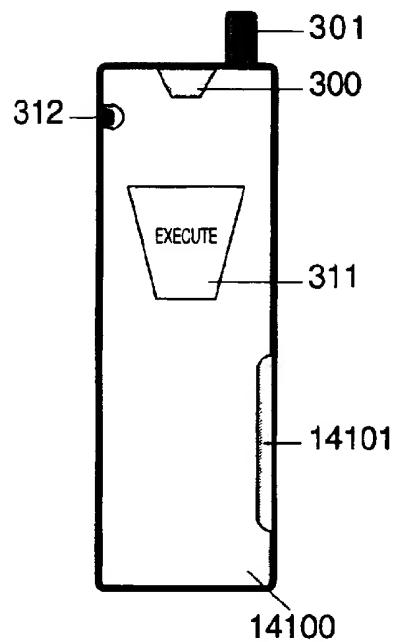


FIG.141C

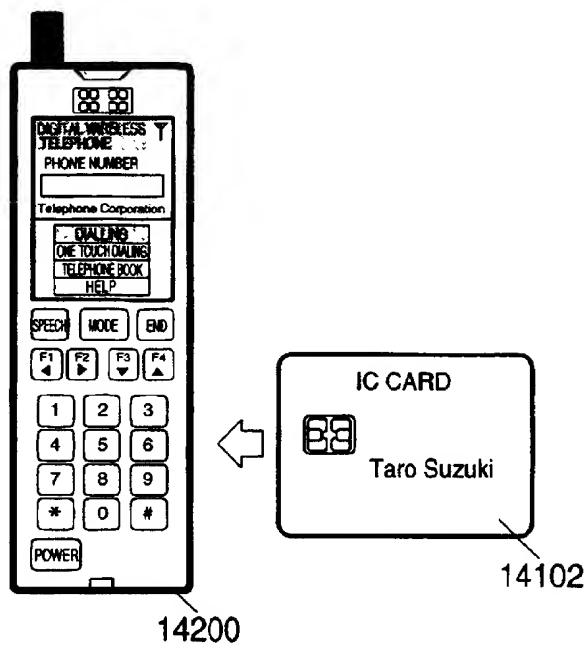


FIG.141D

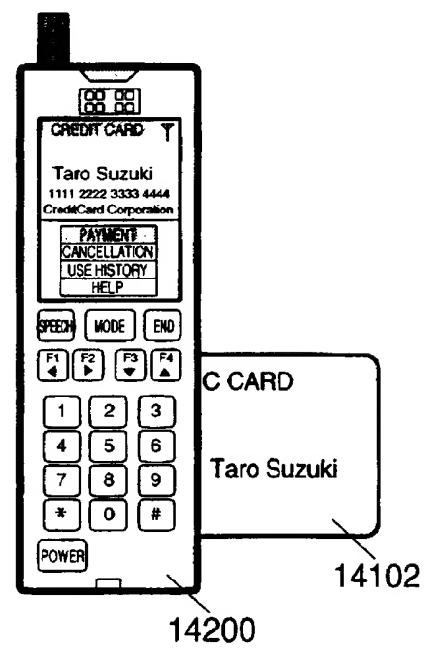


FIG. 142

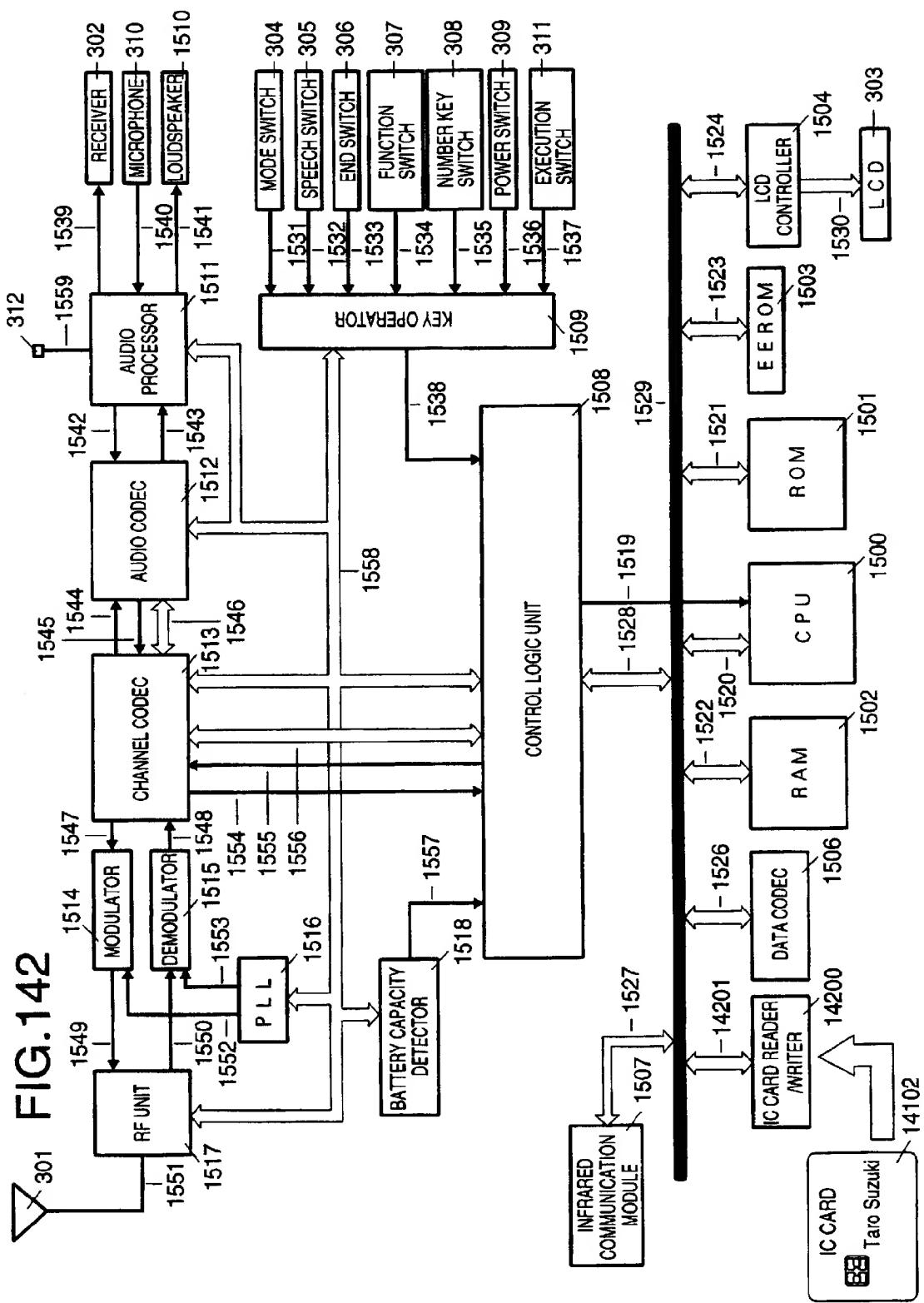


FIG. 143

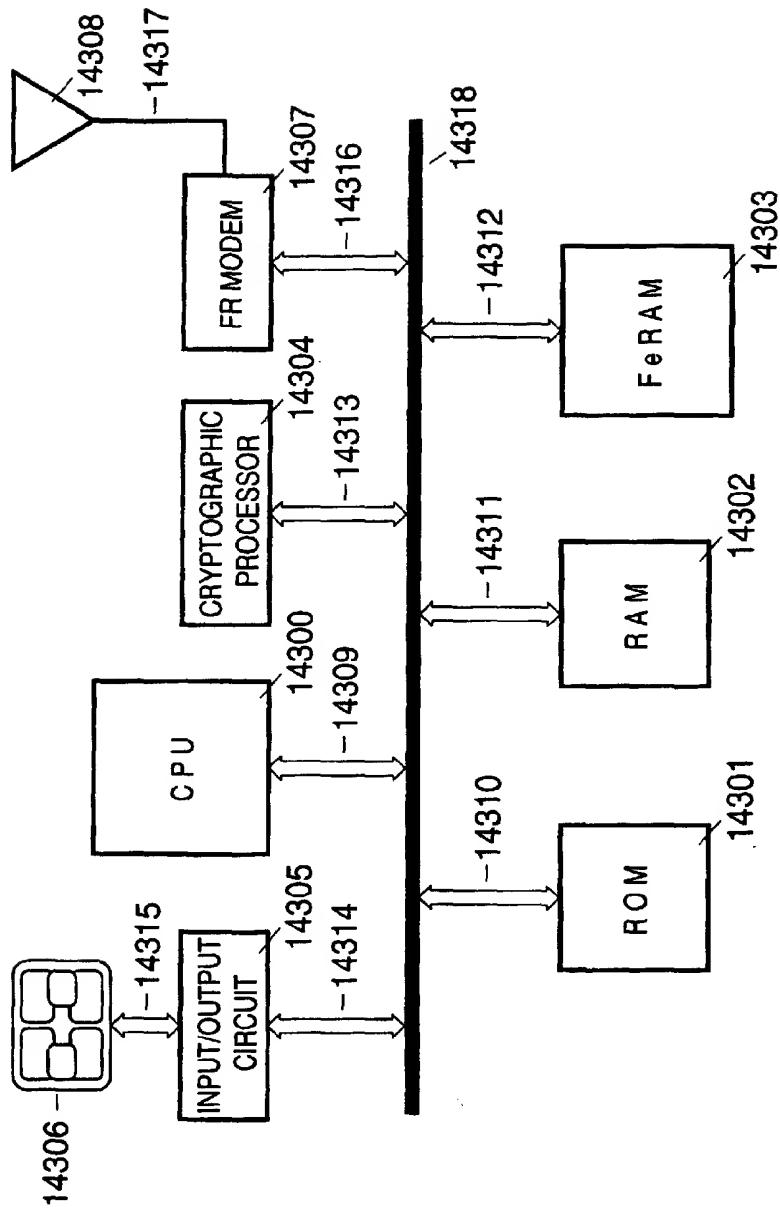
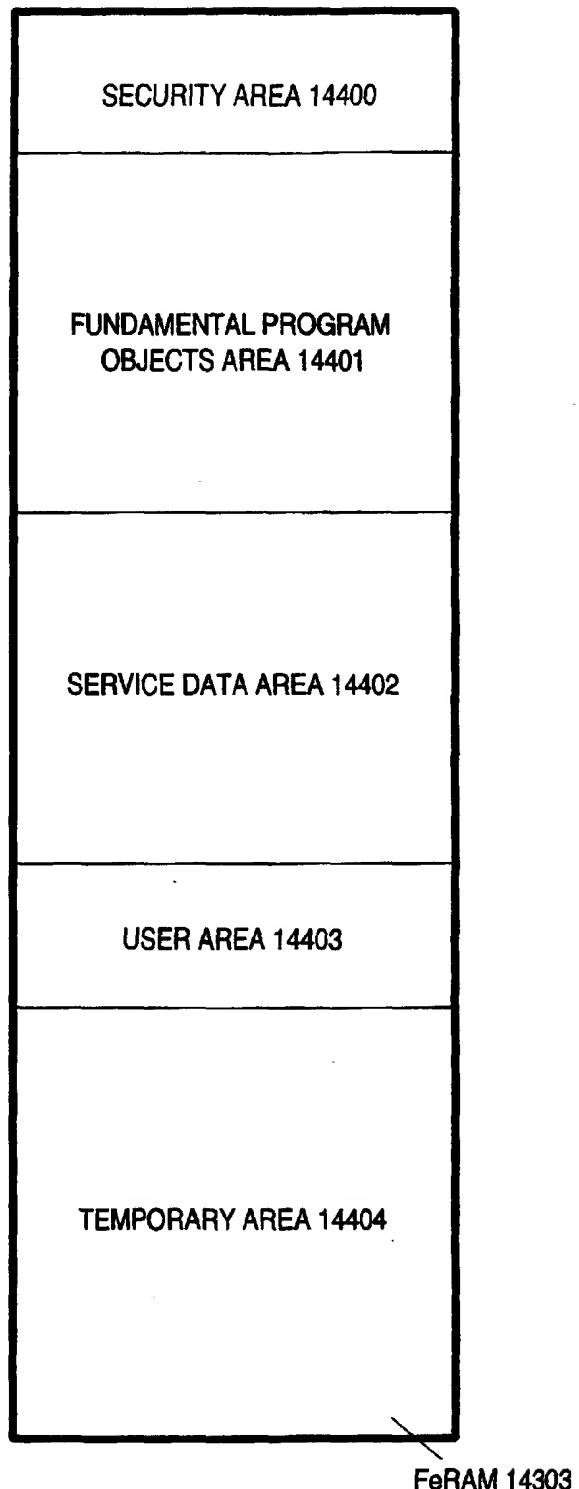


FIG.144



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP98/03608

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>6</sup> G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>6</sup> G06F17/60, G07F7/08, G07G1/12, H04B7/26, G06F19/00 // G06F153:00,  
G06F19/00 // G06F157:00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1926-1996 Toroku Jitsuyo Shinan Koho 1994-1998  
Kokai Jitsuyo Shinan Koho 1971-1998 Jitsuyo Shinan Toroku Koho 1996-1998

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GOLDSTEIN, Theodore: "The Gateway Security Model in the Java Electronic Commerce Framework" in LNCS vol 1318 (Financial Cryptography; Proceedings of FC '97), June 1997 (06. 97), Springer-Verlag (Berlin, Germany), pp340-354.	1-4, 27-48, 55-64, 69-74, 93, 97-99, 102, 107, 111-114, 117, 118, 122, 126-128, 131, 133-144, 146-154, 156-161, 163-168, 172, 173, 178-195

Further documents are listed in the continuation of Box C.  See patent family annex.

• Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier document but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 10 November, 1998 (10. 11. 98)	Date of mailing of the international search report 1 December, 1998 (01. 12. 98)
Name and mailing address of the ISA/ Japanese Patent Office	Authorized officer
Facsimile No.	Telephone No.

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP98/03608

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	SUN MICROSYSTEMS INCORPORATED: "Writing Code for the JECF" in <i>Java Electronic Commerce Framework, alpha 0.6</i> , May 1997 (05. 97).	1-4, 27-48, 55-64, 69-74, 93, 97-99, 102, 107, 111-114, 117, 118, 122, 126-128, 131, 133-144, 146-154, 156-161, 163-168, 172, 173, 178-195
Y	ANONYMOUS: "MasterCard Launches First Multiapplication Smart Card Platform" in <i>Report on Smart Cards</i> , vol 11 issue 10, May 26, 1997 (26. 05. 97)	1-4, 27-48, 55-64, 69-74, 93, 97-99, 102, 107, 111-114, 117, 118, 122, 126-128, 131, 133-144, 146-154, 156-161, 163-168, 172, 173, 178-195
Y	JP, 6-121075, A (Nippon Telegraph & Telephone Corp.), 28 April, 1994 (28. 04. 94) (Family: none)	1-4, 27-48, 55-64, 69-74, 93, 97-99, 102, 107, 111-114, 117, 118, 122, 126-128, 131, 133-144, 146-154, 156-161, 163-168, 172, 173, 178-195
Y	JP, 8-279025, A (Motorola, Inc.), 22 October, 1996 (22. 10. 96) & GB, 2298613, A & DE, 19607509, A1 & FR, 2732136, A1 & CA, 2169326, A	1-4, 27-48, 55-64, 69-74, 93, 97-99, 102, 107, 111-114, 117, 118, 122, 126-128, 131, 133-144, 146-154, 156-161, 163-168, 172, 173, 178-195

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP98/03608

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO, 96/25828, A1 (Nokia Mobile Phones Ltd), 9 February, 1996 (09. 02. 96) & FI, 9500685, A & FI, 99071, B & AU, 9646247, A & EP, 809916, A1	1-4, 27-48, 55-64, 69-74, 93, 97-99, 102, 107, 111-114, 117, 118, 122, 126-128, 131, 133-144, 146-154, 156-161, 163-168, 172, 173, 178-195
Y	ANONYMOUS: "Smart Card — Schlumberger Announces First-Ever Java-Based Smart Card" in EDGE — Work-Group Computing Report, Vol 7, No 338, Nov 4 1996 (04. 11. 96), page 9.	1-4, 27-48, 55-64, 69-74, 93, 97-99, 102, 107, 111-114, 117, 118, 122, 126-128, 131, 133-144, 146-154, 156-161, 163-168, 172, 173, 178-195
Y	JP, 8-101875, A (Transaction Technology Inc.), 16 April, 1996 (16. 04. 96) & EP, 662665, A2 & AU, 9481732, A & CA, 2140052, A & BR, 9500025, A & ZA, 9500058, A & CN, 1121295, A	1-4, 27-48, 55-64, 69-74, 93, 97-99, 102, 107, 111-114, 117, 118, 122, 126-128, 131, 133-144, 146-154, 156-161, 163-168, 172, 173, 178-195
Y	O'MAHONY et al: Eletronic Payment Systems June 1997 (07. 97), Artech House (Boston, USA) pp 191-220.	1-4, 27-48, 55-64, 69-74, 93, 97-99, 102, 107, 111-114, 117, 118, 122, 126-128, 131, 133-144, 146-154, 156-161, 163-168, 172, 173, 178-195

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP98/03608

## C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO, 96/02890, A1 (NTT Data Communications Systems Corp), 1 February, 1996 (01. 02. 96) & EP, 720102, A1, A4 & CN, 1130434, A & JP, 8-30702, A & JP, 8-190598, A & JP, 8-202774, A	3, 40, 41, 44, 48
Y	JP, 8-153248, A (Sanyo Electric Co., Ltd.), 11 June, 1996 (11. 06. 96) (Family: none)	27, 31, 165
Y	ANONYMOUS: "France Telecom Mobiles Offers Mobicarte Pre-paid Phone Card to Avoid Bad Debt Problems" in <i>Computergram International</i> , No 3125, March 21 1997 (21. 03. 97)	63, 64, 111-114, 142-144
Y	ANONYMOUS: "Ferroelectric Smart Cards Go to Market." in <i>Report on Smart Cards</i> , Vol. 10, Issue 19, September 23 1996 (23. 09. 96).	140, 141

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